

## 2.0 BASELINE/AFFECTED ENVIRONMENT

This section describes the biological resources baseline/affected environment within the study area for the Bakersfield-to-Los Angeles region, including a general description of the regional physical characteristics and vegetation communities, sensitive vegetation communities, sensitive plant species, sensitive wildlife species, and jurisdictional waters and wetlands.

### 2.1 STUDY AREA

The Alignments for the High-Speed Train and its alternatives extend from the San Francisco Bay Area to San Diego. This report analyzes the region traversed by the alignments from Los Angeles to Bakersfield. Alignment options in this region pass through the cities of Santa Clarita, Vernon, Glendale, San Fernando, Palmdale, Burbank, Lancaster, Tehachapi, and Bakersfield as well as undeveloped areas of Kern County and Los Angeles County.

The study area for biological resources encompasses 0.8 km (0.5 mi) around stations and on both sides of the corridors as measured from the centerline of the alignments (Figure 2.1-1). The centerline is the mid point between tracks of opposing travel or right-of-way.

### 2.2 GENERAL DESCRIPTION OF REGIONAL PHYSICAL CHARACTERISTICS AND VEGETATION COMMUNITIES

This section describes the physical characteristics and vegetation communities typical of the Bakersfield-to-Los Angeles region.

#### 2.2.1 Physical Characteristics of the Region

The study area ranges in elevation from 78 to 1,310 meters (m) (250 to 5,600 feet (ft)). The widely varying topography is comprised of mountainous regions with steep ridges to valleys and flat plains. The northwestern portion of the study area is located in the San Joaquin Valley, which is characterized by a flat plain that extends east to the Tejon Mountains, which run approximately north to south. The City of Tehachapi is located in a flat valley between the Tejon Mountains and the Tehachapi Mountains, which also run north to south. The plain also extends south and abruptly elevates into the San Gabriel Mountains, which run west to east, in the central portion of the study area. The San Gabriel Mountains gradually decline into the flat Los Angeles Basin in the southern portion of the study area. Between the Tehachapi Mountains and the San Gabriel Mountains in the eastern portion of the study area is the Antelope Valley, which is characterized by a flat plain dotted with isolated peaks.

Major water courses are located throughout the study area. Pyramid Lake and Castic Lake are located in the west along I-5 and Lake Palmdale and Una Lake are located in the east near Sierra Highway. The Santa Clara River traverses the south central portion of the study area through Soledad Canyon. The Los Angeles River winds through the City of Los Angeles in the southernmost part of the study area.

#### 2.2.2 Vegetation Communities Typical of the Region

It is important to note that plant communities are not always clearly defined with strictly delineated boundaries. Plant communities are dependent on or affected by factors such as geographical location, soil types, precipitation rates, angle and direction of slopes, elevations, microclimates and successional considerations. Therefore it is not uncommon to find a particular plant or grouping of plants growing outside what would be considered their customary habitats if some of the above factors are

advantageous to that growth. There are 14 major plant communities within the study area: urban/developed, agriculture, chaparral, coastal sage scrub, oak woodland and forest, valley grassland, creosote scrub brush, desert saltbush scrub, foothill pine-oak woodland, montane coniferous forest, pinyon-juniper woodland, riparian woodland, freshwater marsh and Mojave mixed woody scrub. Representative photographs of these vegetation communities within the study area are shown in Figure 2.2-1.

**Urban/Developed:** Urban or developed land is comprised of areas of intensive use with much of the land covered by structures. Included in this category are cities, transportation, power and communications facilities, residences, mills, shopping centers, industrial and commercial complexes, and institutions that may, in some instances, be isolated from urban areas. Agricultural land, forest, wetland, or water areas on the fringe of urban or built-up areas are not included in this category except where they are surrounded and dominated by urban development.

Urban/developed areas within the study area include the cities of Los Angeles, Vernon, Glendale, San Fernando, Burbank, Sylmar, Santa Clarita, Bakersfield, Tehachapi, Mojave, Lancaster, and Palmdale.

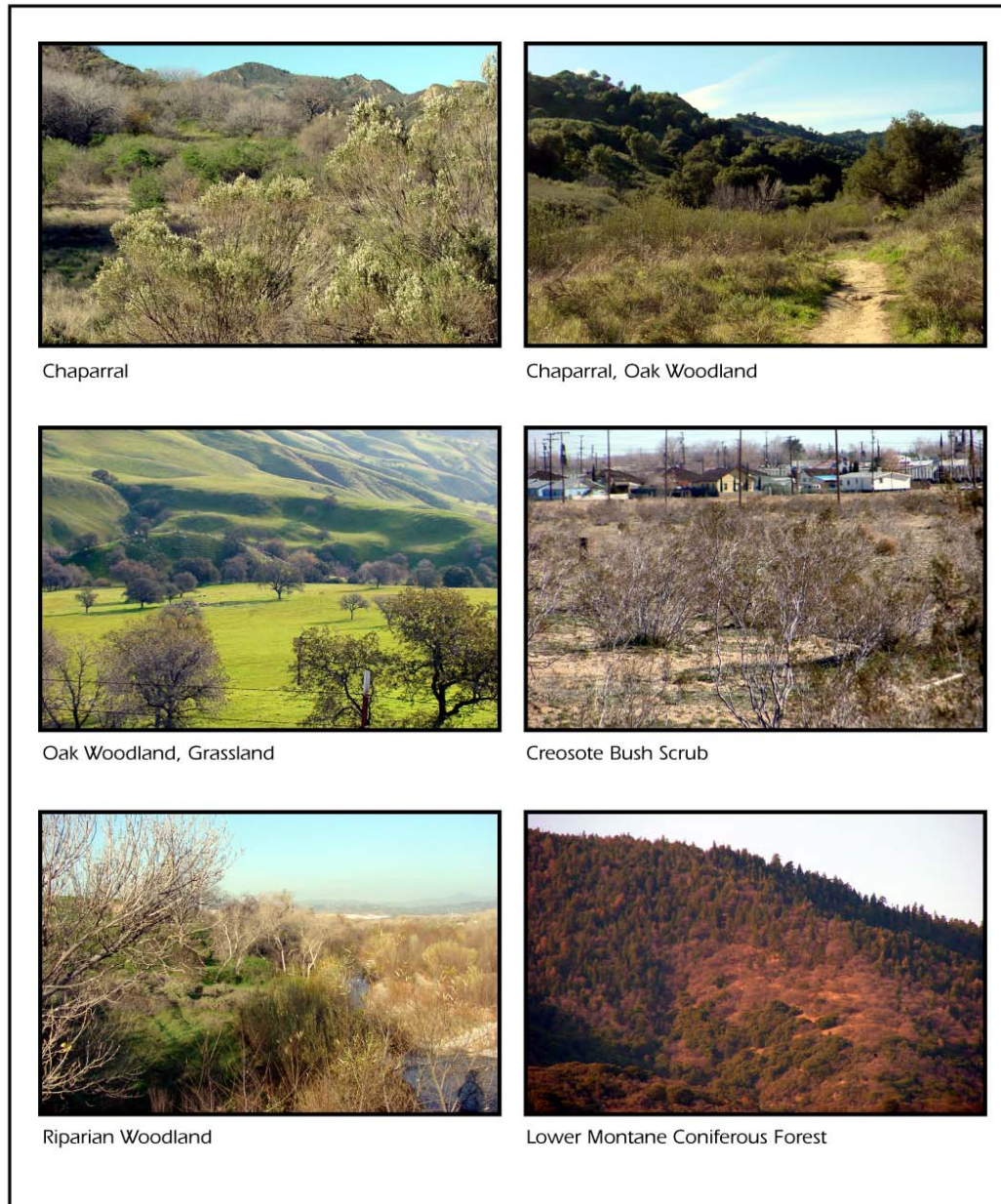
**Agriculture:** Agricultural land may be defined broadly as land used primarily for production of food and fiber and includes crop fields, orchards, vineyards and grazing lands. The number of building complexes is smaller and the density of the road and highway network is much lower in agricultural land than in urban or developed land. Lands producing economic commodities such as wild rice, cattails, or certain forest products commonly associated with wetlands are excluded from the agriculture category and carry a wetlands designation. Similarly, when wetlands are drained for agricultural purposes, then they are included in the agriculture category. Agricultural lands that are no longer in use and where wetlands vegetation has reestablished are included in the wetlands category.

Agricultural areas within the study area include south of downtown Bakersfield to the Grapevine pass along the Union Avenue and Wheeler Ridge corridors, I-5, and east of Bakersfield to the Tejon Mountains. These areas are dominated by crop fields, orchards and vineyards. Ranch operations and cattle grazing are predominant in the Tejon and Tehachapi Mountains.

**Chaparral:** Chaparral occupies dry, rocky or gravelly slopes with either light or heavy soils at an elevation generally above 914 m (3,000 ft) where the climate is characterized by long, dry summers with limited rainfall occurring almost exclusively during the mild winter. Plant growth occurs primarily during the winter. Drought resistant adaptations of chaparral species include being tough and woody, having small leathery evergreen leaves that often orient vertically to minimize exposure to the sun, and crown sprouting immediately after fires without having to wait for rainfall to germinate seeds. These adaptations enable chaparral plants to survive dry summers. Chaparral shrubs are typically 1.8 to 3.7 m (six to 12 ft) tall and have deep roots for collecting moisture from the substrate. There is little or no vegetational understory in these communities. After fire, shrubs are replaced by a high density of spring and summer annuals that survive until the shrubs can recover. Several types of chaparral have been identified including chamise chaparral, ceanothus chaparral, manzanita chaparral and scrub oak chaparral. Species that are common to chaparral include chamise (*Adenostoma fasciculatum*), red shank (*A. sparsifolium*), several species of California lilac (*Ceanothus* spp.), bigberry and eastwood manzanita (*Arctostaphylos glauca* and *A. glandulosa*), scrub oaks (*Quercus dumosa* and *Q. berberidifolia*), mountain mahogany (*Cercocarpus betuloides*), coffeeberry (*Rhamnus californica*), woolly blue curls (*Trichostema lanatum*), toyon (*Heteromeles arbutifolia*), foothill ash (*Fraxinus dipetala*), sugarbush (*Rhus ovata*), hollyleaf and littleleaf redberry (*Rhamnus ilicifolia* and *R. crocea*), bush poppy (*Dendromecon rigida*), silk-tassel bush (*Garrya veatchii*), prickly poppy (*Leptodactylon californicum*), laurel sumac (*Malosma laurina*), hollyleaf cherry (*Prunus ilicifolia*), and chaparral yucca (*Yucca whipplei*).

Chaparral occurs along I-5 north of Castaic Lake to north of Pyramid Lake, along north facing slopes of Soledad Canyon, and along Sierra Highway near Lake Palmdale.

**Figure 2.2-1**  
**Representative Photographs of Vegetation Communities:**  
**Bakersfield-to-Los Angeles**



**Representative Photographs of Vegetation Communities**

California High-Speed Train Program Biological Resources Technical Evaluation

**Figure 2.2-1**



Coastal sage scrub: Also called soft chaparral, coastal sage scrub occurs primarily below 914 m (3,000 ft) and is developed primarily on western slopes of mountains, on steep, south-facing, wind-exposed slopes, and in areas where the marine layer penetrates inland to foothills and canyons. Shrubs are more widely spaced than those typical of chaparral and do not have the characteristic rigidity or thick drought resistant leaves. The coastal sage scrub community receives 25.4 to 50.8 centimeters (cm) (10 to 20 inches (in)) of rainfall annually and is rarely subject to frost conditions. Remaining dormant throughout the dry season, plants either drop their leaves or produce smaller leaves on secondary shoots during the summer, which reduces water loss. Root systems are generally shallow and some shrubs store water in succulent leaves and stems. Other plants produce aromatic oils from the surfaces of leaves, making them less appealing to grazing animals and reducing water loss, but at the cost of increased flammability during the fire season. Typical species in this community include California sagebrush (*Artemisia californica*), ashleaf buckwheat (*Eriogonum cinereum*), long-stemmed buckwheat (*E. elongatum*), California buckwheat (*E. fasciculatum*), white sage (*Salvia apiana*), black sage (*S. mellifera*), purple sage (*S. leucophylla*), bush monkeyflower (*Mimulus longiflorus*), California bush sunflower (*Encelia californica*), coyote brush (*Baccharis pilularis*), sawtooth and coast goldenbush (*Hazardia squarrosus* and *Isocoma menziesii*), laurel sumac (*Malosma laurina*), wooly blue curls (*Trichostema lanatum*), canyon sunflower (*Venegasia carpesioides*), deerweed (*Lotus scoparius*), golden yarrow (*Eriophyllum confertiflorum*), coast prickly pear (*Opuntia littoralis*), lupines (*Lupinus* spp.) and Canadian wildrye (*Elymus canadensis*).

Coastal sage scrub is located within the study area along I-5 north of SR 126 in northern Santa Clarita to north of Castaic Lake and along portions of Soledad Canyon Road.

Oak woodland and forest: The types of oak communities identified within the study area include blue oak woodland, valley oak woodland, interior live oak forest and canyon live oak forest. Blue oak woodland is dominated by blue oak (*Quercus douglasii*), but may include representatives of other trees such as gray pine (*Pinus sabiniana*). Stands vary from open savannas with grassy understories to fairly dense woodlands with shrubby understories. Blue oak woodlands are typical of well drained soils from 914 to 1,219 m (3,000 to 4,000 ft).

Valley oak woodland stands form grassy-understoried savannas rather than dense woodlands. Valley oak (*Quercus lobata*) is usually the only tree present. This winter-deciduous species is California's largest broad-leaved tree and reaches heights of 15 to 35 m (49 to 115 ft) when mature. Valley oak communities thrive in deep, well-drained alluvial soils, usually in valley bottoms. They are also found in non-alluvial settings in the South Coast and Transverse ranges.

Interior live oak forests form a dense, closed-canopy evergreen forest dominated by interior live oak (*Quercus wislizenii*) with brushy understories. Interior live oak forests occupy mountainsides, broad, alluvial river banks, and valley bottoms and foothills.

Canyon live oak forest is dominated by canyon live oak (*Quercus chrysolepis*) which typically forms forests with little understory. The growing season for this community lasts from late spring into summer. Trees often have multiple trunks, probably from crown-sprouting after fires. Canyon live oak forests appear in canyons, on north-facing slopes in stands up to 20 m (66 ft) tall, and in low, chaparral-like stands less than 10 m (33 ft) tall on south-facing slopes. Canyon live oak communities may be mixed with and not entirely distinct from mixed evergreen forests, blue oak woodlands, coast live oak forests or northern mixed chaparral.

Oak woodlands and forests typically integrate with both valley grassland and riparian woodland. Annual rainfall is generally between 38 and 64 cm (15 and 25 in) and intermittent streams may be present. The dominant trees are valley oak, coast live oak (*Quercus agrifolia*), Engelmann oak (*Q. engelmannii*), black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), California bay laurel (*Umbellularia californica*), toyon, and blue elderberry (*Sambucus mexicana*). Smaller trees and shrubs along with herbaceous plants and grasses that form the vegetative understory include coffeeberry (*Rhamnus*

*californica*), sugar bush (*Rhus ovata*), lemonadeberry (*Rhus integrifolia*), squawbush (*Rhus trilobata*), poison oak (*Toxicodendron diversilobum*), coastal wood fern (*Dryopteris arguta*), and bracken fern (*Pteridium aquilinum*).

Oak woodlands and forests in the study area occur on hillsides and canyon bottoms along I-5 near Santa Clarita, throughout Soledad Canyon, and in the Tehachapi and Tejon Mountains (blue oak woodland).

**Valley grassland:** Native valley grasslands are scarce in Southern California with few communities ranging more than a few acres in extent. In general, grasslands have changed in character from native, perennial bunchgrasses to introduced, annual species. Valley grassland occupies deep, sometimes rocky but usually well-drained soils in hot, interior valleys generally below 1,219 m (4000 ft). Grassland communities often occur on south-facing slopes but are more typically found on flatter land, adjacent to and often inter mixed with chaparral, coastal sage scrub and southern oak or riparian woodland. Annual rainfall typically ranges between 15 and 51 cm (six and 20 in), summers are hot and dry and frost is not uncommon in the winter. Although sometimes dotted with oak species such as valley and coast live oak, grasslands are characterized primarily by shrinking expanses of native grasses such as needlegrass (*Nasella*), bunchgrass (*Poa* spp.) or three-awn (*Aristida* spp.), and expanding areas of introduced grasses such as brome grass (*Bromus* spp.), wild oats (*Avena* spp.), fescue (*Festuca* spp.), ryegrass (*Lolium* spp.) and harding grass (*Phalaris* spp.). Springtime also can bring an abundance of native and introduced wildflowers such as buttercup (*Ranunculus* spp.), larkspur (*Delphinium* spp.), mariposa lily (*Calochortus* spp.), tarweed (*Hemizonia* spp.), blue-eyed grass (*Sisyrinchium* spp.), blue dicks (*Dichelostemma capitatum*), paintbrush and owl's clover (*Castilleja* spp.), baby blue eyes and meadow nemophila (*Nemophila* and *N. menziesii* spp.), lupines, sow-thistle (*Sonchus* spp.), star-thistle (*Centaurea* spp.) and filaree (*Erodium* spp.).

Within the study area valley grassland is common north of the Grapevine pass along I-5 and on the plains leading into the Tejon Mountains east of Bakersfield.

**Creosote bush scrub:** Creosote bush scrub is one of the most widely spread desert communities. The majority of the desert floor and the lower slopes of foothills to 1,067 m (3,500 ft) are often covered by this scrub community. The soil in these communities is well-drained and the climate consists of very high summer temperatures and winter temperatures rarely approaching freezing. Annual average rainfall is typically less than 5 cm (2 in) in a dry year to about 20 cm (8 in) in a wet one. Annual rainfall arrives in the form of summer showers and many of the shrubs and annual species bloom either in the summer or in the fall. Although creosote bush scrub is dominated by woody shrubs, both herbaceous annuals and perennials are also represented. This community is dominated by creosote bush (*Larrea tridentata*). Other common species include burroweed (*Ambrosia dumosa*), ocotillo (*Fouquieria splendens*), Mojave and Schott's indigo bush (*Psoralea arborescens* and *P. schottii*), desert thorn and Anderson's desert thorn (*Lycium brevipes* and *L. andersonii*), cheesebush (*Hymenoclea salsola*), brittlebush and rayless encelia (*Encelia farinosa* and *E. frutescens*), apricot or desert mallow (*Sphaeralcea ambigua*), and beavertail, teddybear and silver or golden cholla (*Opuntia basilaris*, *bigelovii* and *echinocarpa*).

Creosote bush scrub is abundant in the study area along Sierra Highway north of Lancaster to Mojave.

**Desert saltbush scrub:** Desert saltbush scrub is characterized by low, grayish, microphyllous shrubs, 0.3 to 1 m (1 to 3.3 ft) tall intermixed with some succulent species. Typical stands are strongly dominated by a single saltbush species such as silverscale (*Atriplex argentea*), fourwing saltbush (*A. canescens*), shadscale saltbush (*A. confertifolia*), wheel-scale saltbush (*A. elegans* ssp. *fasciculata*), desert holly (*A. hymenelytra*), big saltbush (*A. lentiformis*), saltbush (*A. gardneri* var. *falcata*), Parish's brittle scale (*A. parryi*), arrow scale (*A. phyllostegia*), allscale (*A. polycarpa*), small-scale (*A. pusilla*), and Torrey's saltbush (*A. lentiformis* ssp. *torreyi*). Other common species include shrubby alkali aster (*Machaeranthera carnosa*), hop-sage (*Grayia spinosa*), cheese bush (*Hymenoclea salsola*), kochia (*Kochia californica*), Anderson's desert thorn (*Lycium andersonii*), boxthorn (*L. cooperi*), honey mesquite (*Prosopis glandulosa*

ssp. *torreyana*), and western seepweed (*Suaeda occidentalis*). Shrubs are widely spaced, exposing bare ground. Desert saltbush scrub is suited to fine-textured, poorly drained soils with high alkalinity and/or salinity. These communities are usually found on margins of dry lake beds in the Colorado, Mojave, and Great Basin deserts.

Within the study area, desert saltbush scrub is common along Sierra Highway north of Lancaster and south of Mojave.

**Foothill pine-oak woodland:** Foothill pine-oak woodlands are a climax community characterized by mixed or pure stands of digger pine (*Pinus sabiniana*) and blue oak (*Quercus douglasii*). Mixed stands are more common with digger pine usually towering over the oaks in undisturbed stands. Understories are usually dominated by introduced annual plants. Soils are typically poor, shallow, and well-drained, and are located on rocky or exposed ridges or canyons. Foothill pine-oak woodlands form a nearly continuous belt around California's Central Valley between valley and foothill grassland and lower montane mixed conifer forest except for a gap in Tulare County where digger pine does not occur.

Foothill pine-oak woodlands occur in the Tejon Mountains along SR-58 within the study area.

**Montane coniferous forest:** Montane coniferous forest includes both yellow pine forest and subalpine forest, the former occupying mountain slopes from between 1,524 and 2,438 m (5,000 and 8,000 ft), and the latter above that to approximately 2,743 to 2,896 m (9,000 to 9,500 ft). This forest community primarily occupies ridge tops and cismontane slopes, which are considerably moister than the slopes on the desert side of the mountains. Average annual precipitation for montane coniferous forest is between 89 and 127 cm (35 and 50 in), some of which falls as snow. Typical species encountered in the lower belt of montane forest are coulter pine (*Pinus coulteri*), ponderosa pine (*P. ponderosa*), jeffrey pine (*P. jeffreyi*), sugar pine (*P. lambertiana*), incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), big-cone spruce (*Pseudotsuga macrocarpa*), western juniper (*Juniperus occidentalis*), black and canyon live oaks (*Quercus kelloggii* and *Q. chrysolepis*), curl-leaf mountain mahogany (*Cercocarpus ledifolius*), manzanitas (*Arctostaphylos* spp.), deerbrush and snowbush (*Ceanothus integerrimus* and *C. cordulatus*), bush chinquapin (*Chrysolepis sempervirens*), thimbleberry (*Rubus parviflorus*), Sierra currant and Sierra gooseberry (*Ribes nevadense* and *R. roezlii*), in addition to many species of lupine, buckwheat penstemon, phacelia (*Eriogonum* spp., *Penstemon* spp. and *Phacelia* spp.). Above the yellow pine belt are lodgepole pine (*Pinus contorta*) and limber pine (*P. flexilis*), and many species of small subalpine wildflowers.

Montane coniferous forest occurs in the study area in the Tejon Mountains along SR-58.

**Pinyon-juniper woodland:** Pinyon-juniper woodlands are typically found on the desert side of mountains, generally on the eastern slopes of north-south trending ranges and on the northern slopes of east-west trending ranges, at elevations from approximately 1,524 to 2,743 m (5,000 to 9,000 ft). In Southern California, these woodlands extend from the Tehachapi Mountains southward and include the higher mountains of the Mojave Desert. Average annual precipitation is between 30.5 and 51 cm (12 and 20 in), some of which is in the form of snow. The dominant trees are single-leaf pinyon pine (*Pinus monophylla*) and California and Utah juniper (*Juniperus californica* and *J. osteosperma*), desert scrub oak (*Quercus turbinella*), Tucker's oak (*Q. john-tuckeri*), Muller's oak (*Q. cornelius-mulleri*), Mojave and banana yucca (*Yucca shidigera* and *Y. baccata*), cliff rose and bitterbrush (*Purshia mexicana* and *P. tridentata*), apache plume (*Fallugia paradoxa*), and curl-leaf mountain-mahogany. Pinyon-juniper woodlands share many of the same scrub species as sagebrush scrub, including silver sagebrush (*Artemisia cana*), black sagebrush (*A. nova*), Great Basin sagebrush (*A. tridentata*), rubber and yellow rabbitbrush (*Chrysothamnus nauseosus* and *C. viscidiflorus*), blackbrush (*Coleogyne ramosissima*), fourwing and shadscale saltbush (*Atriplex canescens* and *A. confertifolia*), horsebrush (*Tetradymia* spp.) and bitterbrush (*Purshia tridentata*).

Pinyon-juniper woodlands are located in and adjacent to the Hungry Valley State Vehicular Recreation Park north of Pyramid Lake on I-5 and along Soledad Canyon Road north into Palmdale.

**Riparian woodland:** Riparian woodlands are dependent on the presence of or proximity to non-seasonal water sources. The water may be surface water or shallow ground water. Riparian woodlands may measure a few meters in width to much broader depending on water flow. Where non-seasonal streams flow out of the mountains and onto flatter grasslands, the riparian woodland community may be a relatively broad one, but in the higher elevations where water flows down a narrow passageway often confined by steep hillsides, this community may be very narrow. Riparian woodland may also occupy areas surrounding man-made lakes and reservoirs. Typical species of this community include western sycamore, fremont and black cottonwood (*Populus fremontii* and *P. trichocarpa*), white alder (*Alnus rhombifolia*), California black walnut (*Juglans californica*), big-leaf maple (*Acer macrophyllum*), California bay laurel (*Umbellularia californica*), willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), and smaller plants such as stream orchid (*Epipactis gigantea*), poison oak, California blackberry (*Rubus ursinus*), horsetails (*Equisetum* spp.), humboldt lily (*Lilium humboldtii*), and scarlet and creek monkeyflower (*Mimulus cardinalis* and *M. guttatus*).

Riparian woodlands are common along the major waterways in the study area, including Pyramid Lake, Castic Lake, Lake Palmdale, Una Lake and the Santa Clara River.

**Freshwater marshes:** Freshwater marshes are highly productive environments that support many species of distinctive plants and animals. Freshwater marshes are semi-dry or wet areas of standing or slow moving water habitats less than 152 m (500 ft) above mean sea level that are usually the result of water runoff from mountainous regions. Marshes in Southern California often dry up or become quite confined during the dry season. Therefore, plants in this community must be tolerant of dry soils for at least part of the year. Common vegetation with these habitats include water cress (*Rorippa nasturtium-aquaticum*), the water smartweeds and knotweed (*Polygonum amphibium* and *punctatum*, *Polygonum arenastrum*), pond lily (*Nuphar luteum*), common cattail (*Typha latifolia*), yerba mansa (*Anemopsis californica*), western goldenrod (*Euthamia occidentalis*), biennial sagewort (*Artemisia biennis*), mosquito fern (*Azolla fillicoides*), tall flatsedge (*Cyperus eragrostis*), and species of duckweed (*Lemna* spp.), tule (*Scirpus* spp.), sedge (*Carex* spp.), rush (*Juncus* spp.) and pondweed (*Potamogeton* spp.).

Freshwater marshes are common in the study area along the Santa Clara River.

**Mojave mixed woody scrub:** Mojave mixed woody scrub occurs on rolling to steep hills with soils that are very shallow, overly-drained and usually derived from granite. These sites have extremely low water holding capacity, mild alkalinity, and are low in salinity. This community is characterized by the presence of Joshua tree (*Yucca brevifolia*), interior buckwheat (*Eriogonum fasciculatum polifolium*), and bladderpod (*Isomeris arborea*). Most of the constituent species also occur in other nearby communities such as Great Basin scrub, blackbush scrub, pinyon woodlands, and creosote bush scrub, including burro-weed (*Ambrosia dumosa*), saltbush, Mojave brickellbush (*Brickellia oblongifolia* var. *linifolia*), Kern County evening-primrose (*Camissonia kernensis*), terete-leaved rabbit-brush (*Chrysothamnus teretifolius*), blackbrush (*Coleogyne ramosissima*), indigo brush (*Psoralea fremontii* var. *fremontii*), Nevada joint fir (*Ephedra nevadensis*), Mormon tea (*E. viridis*), interior goldenbush (*Ericameria linearifolia*), rock nettle (*Eucnide urens*), argus bedstraw (*Galium argense*), showy gilia (*Gilia cana*), hop-sage (*Grayia spinosa*), grape soda lupine (*Lupinus excubitus*), sand blazing star (*Mentzelia involucrata*), beavertail prickly pear (*Opuntia basilaris*), Charlotte's phacelia (*Phacelia nashiana*), desert bitterbrush (*Pursia tridentata* var. *glandulosa*), bladdersage (*Salazaria mexicana*), desert sage (*Salvia dorrii*), and cotton-thorn (*Tetradymia axillaris*). Mojave mixed woody scrub is scattered along the eastern base of the Sierra Nevada Mountains from the southwestern part of Owens Valley southward along the Tehachapi's, San Gabriel, San Bernardino, San Jacinto, and Peninsula ranges to northern Baja California between 610 and 1,524 m (2,000 and 5,000 ft) above sea level.



Within the study area, Mojave mixed woody scrub is common along Sierra Highway north of the Kern/Los Angeles County boundary and throughout the Tehachapi Mountains along SR-58.

## 2.3 SENSITIVE VEGETATION COMMUNITIES

This section describes the sensitive vegetation communities present within the study area for the Bakersfield-to-Los Angeles region. Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. These resources have been defined by federal, state, and local government conservation programs. The source used to determine the sensitive status of vegetation communities was the CNDDDB (CDFG 2002).

California walnut woodland: California walnut woodland is similar to interior live oak woodland and coast live oak woodland, but has a more open tree canopy locally dominated by California black walnut. The open tree canopy allows development of a grassy understory mainly comprised of introduced winter-active annuals that complete most of their growth cycle before the deciduous walnuts leaf out in spring. Other characteristic species include coast live oak, engelmann oak (*Q. engelmannii*), sugar bush, skunkbrush (*R. trilobata*), red brome (*Bromus rubens*), and white horehound (*Marrubium vulgare*). California Walnut Woodlands are found on relatively moist, fine-textured soils of valley slopes and bottoms, as well as encircling rocky outcrops. These drier, rocky sites often support Venturan or Riversidean sage scrub though California walnut woodlands may also integrate with coast live oak woodland or coast live oak forest, especially in canyons. California walnut woodland communities range from the south side of the San Gabriel Mountains to the Santa Ana Mountains, approximately between 152 and 914 m (500 and 3,000 ft).

California walnut woodland is located within the study area along I-5 southwest of Santa Clarita.

Mainland cherry forest: Mainland cherry forests are dominated by lyon cherry (*Prunus ilicifolia* spp. *lyonii*) and hollyleaf cherry (*Prunus ilicifolia ilicifolia*). These trees are less than 15 m (49 ft) in height and most often occur in shrub form. Canopy cover is continuous, resulting in sparse understory growth. Mainland cherry forests grow on steep, dry, north-facing slopes at elevations from sea-level to 100 m (0 to 328 ft). Soils are typically sand-stone derived and rocky. This community exists in the Transverse Mountains and along the outer south coast.

Mainland cherry forest is located within the study area along the Santa Clara River near I-5.

Riversidean alluvial fan sage scrub: Riversidean alluvial fan sage scrub grows on sandy, rocky, alluvial soils deposited by streams that experience periodic flooding. The soils in these areas are well drained to excessively drained and have low water holding capacity and low fertility. This plant community occurs along the coastal side of the Transverse and Peninsular mountain ranges of southern California, primarily including the San Gabriel, San Bernardino and San Jacinto mountains. Vegetation common to Riversidean alluvial fan sage scrub is also characteristic of Riversidean sage scrub and chaparral. These shrub species include scale-broom (*Lepidospartum squamatum*), coastal sagebrush (*Artemisia californica*), interior flat-topped buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), chamise (*Adenostoma fasciculatum*), brittlebush (*Encelia farinosa*), hairy yerba santa (*Eriodictyon trichocalyx*), sugarbush, birch-leafed mountain-mahogany (*Cercocarpus betuloides*), deerweed and California juniper (*Juniperus californica*).

Riversidian alluvial fan sage scrub is located within the study area along the Santa Clara River near I-5 and Soledad Canyon Road.

Southern coast live oak riparian forest: Southern coast live oak riparian forests are characterized by both open and locally dense evergreen riparian woodlands dominated by coast live oak. This community



appears to be richer in herbs and poorer in understory shrubs than other riparian communities. Southern coast live oak riparian forests are found in bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium soils in canyons and valleys of coastal southern California, mostly south of Pt. Conception. Characteristic plant species include big-leaf maple (*Acer macrophyllum*), California mugwort (*Artemisia douglasiana*), California toothwort (*Cardamine californica*), eucrypta (*Eucrypta chrysanthemifolia*), toyon, bush penstemon (*Keckiella cordifolia*), California honeysuckle (*Lonicera hispidula*), wild cucumber (*Marah macrocarpus*), fiesta flower (*Pholistoma auritum*), skunkbrush, California wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), blue elderberry, creeping snowberry (*Symphoricarpos mollis*), poison oak and bay laurel.

Southern coast live oak riparian forest is located within the study area along Lower Piru Creek, which originates from the Pyramid Lake Dam.

Southern cottonwood-willow riparian forest: Southern cottonwood-willow riparian forest are tall, open, broadleaved winter-deciduous riparian forests dominated by Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), and several tree willows. Understories consist of shrubby willows. The dominant species require moist, bare mineral soil. Sub-irrigated and frequently overflowed lands along rivers and streams provide the necessary conditions for germination and establishment. This community can be found along wet stream reaches of the Transverse and Peninsular ranges, from Santa Barbara County south to northern Baja California and east to the edge of the deserts. Other typical plant species include California mugwort, mule fat, wild cucumber, California sycamore, Goodding's black willow (*Salix gooddingii*), sandbar willow (*S. hindsiana*), pacific willow (*S. lasiandra*), arroyo willow (*S. lasiolepis*) and stinging nettle (*Urtica holosericea*).

Southern cottonwood-willow riparian forest is located within the study area along the Santa Clara River near I-5 and along Soledad Canyon Road.

Southern riparian scrub: Southern riparian scrub includes mule fat scrub and southern willow scrub (described below). Mule fat scrub is a tall, herbaceous riparian scrub community that occurs in areas with intermittent stream channels subject to frequent flooding. The dominant species is mule fat. Other characteristic species include Santa Barbara sedge (*Carex barbara*), narrowleaf willow (*Salix exigua*), sandbar willow, arroyo willow and stinging nettle. Mule fat scrub is widely scattered along large rivers from Tehama County to Baja California at elevations less than 610 m (2,000 ft).

Southern riparian scrub is located within the study area along the Santa Clara River in Soledad Canyon near the City of Santa Clarita.

Southern sycamore-alder riparian woodland: Southern sycamore-alder riparian woodland is a tall, open, broadleaved, winter-deciduous streamside woodland dominated by western sycamore and white alder (*Alnus rhombifolia*). These stands seldom form closed canopy forests, and may appear as trees scattered in a shrubby thicket of hard drought-resistant evergreens and deciduous species. Soils consist of very rocky streambeds subject to seasonally high-intensity flooding. White alder increases in abundance on more perennial streams, while western sycamore favors more intermittent hydrographs. Other common forms of vegetation include big-leaf maple, California mugwort, coast live oak, elk clover (*Aralia californica*), horsetail (*Equisetum hymale*), smilo grass (*Piptatherum miaceum*), California blackberry, poison oak, blue elderberry, bay laurel and stinging nettle. Southern sycamore-alder riparian woodlands occupy areas in the Transverse and Peninsular ranges from Point Conception south into northern Baja California.

Southern sycamore-alder riparian woodland is located within the study area along the Santa Clara River in Soledad Canyon and just south of Pyramid Lake near I-5.

Southern willow scrub: Southern willow scrub is distinguished by dense, broadleaved, winter-deciduous riparian thickets dominated by several willow species including Goodding's black willow, sandbar willow, red willow, pacific willow and arroyo willow, with scattered Fremont cottonwood and western sycamore. Most stands are too dense to allow much understory development. Typical soils include loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. This community requires repeated flooding to prevent succession to southern cottonwood-sycamore riparian forest. Southern willow scrub was formerly extensive along the major rivers of coastal southern California but is now much reduced by urban expansion, flood control, and channel improvements.

Southern willow scrub is located within the study area along I-5 from Santa Clarita to Pyramid Lake.

Stabilized interior dunes: Stabilized interior dunes are characterized by winter and spring growing herbs with scatterings of low shrubs or coast live oak. Shrubs contribute to less than ten percent of landcover. Other characteristic species include California croton (*Croton californicus*), California matchweed (*Gutierrezia californica*), telegraph weed (*Heterotheca grandiflora*), buckwheat (*Eriogonum* spp.), contra costa wallflower (*Erysimum capitatum* spp. *angustatum*), and Devil's lantern (*Oenothera deltoids*).

Stabilized interior dunes are located in the study area along SR-58.

Valley needlegrass grassland: Valley needlegrass grasslands are characterized by bunches of purple needlegrass (*Nassella pulchra*) with island pink yarrow (*Achillea borealis*), blow-wives (*Achyrochaena mollis*), false dandelion (*Agoseris heterophylla*), wild oats (*Avena fatua*), common goldenstar (*Bloomeria crocea*), golden brodiaea (*Triteleia ixiodes*), ripgut brome (*Bromus diandrus*), soft chess (*B. mollis*), red brome (*B. rubens*), soap plant (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), California melic (*Melica californica*), chapparal oniongrass (*M. imperfecta*), shooting star (*Dodecatheon* spp.) valley tassels (*Castilleja attenuate*), Plantain (*Plantago erecta*), one-sided bluegrass (*Poa scabrella*), and nodding needlegrass (*Nasella cernua*). Native and introduced annuals occur between the perennials and may actually exceed the bunchgrasses in cover. Soils are usually fine-textured clay that are moist or waterlogged during winter, but very dry in summer. Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, valley needlegrass grasslands are now much reduced.

Valley needlegrass grassland is located within the study area in the San Gabriel Mountains near I-5 south of the Kern County-Los Angeles County border.

Valley oak woodland: Valley Oak woodlands form grassy-understoried savannas rather than dense woodlands. Valley oak is usually the only tree present, though blue oak (*Q. douglasii*) may appear in addition to poison oak and creeping wild rye (*Leymus triticoides*). Valley oak, a winter-deciduous species, is California's largest broad-leaved tree and reaches heights of 15 to 35 m (49 to 115 ft) when mature. Valley oak communities thrive in deep, well-drained alluvial soils, usually in valley bottoms. They are also found in non-alluvial settings in the South Coast and Transverse ranges. The range of valley oak woodlands includes the Sacramento and San Joaquin Valleys adjacent to the Sierra Nevada foothills and valleys of the Coast Ranges from Lake County to western Los Angeles County, usually below 610 m (2,000 ft).

Valley oak woodland is located within the study area along I-5 from Santa Clarita to the Kern County-Los Angeles County border.

Valley saltbush scrub: Valley saltbush scrub is characterized by open, gray or blue-green chenopod scrubs (10 to 40 percent cover) with a low, herbaceous, annual understory. Cover types are dominated by alkali saltbush (*Atriplex polycarpa*) or spinescale (*A. spinifera*), with arrowscale (*A. phyllostegia*), Valley larkspur (*Delphinium recurvatum*), alkali heath (*Frankenia salina*), alkali golden bush (*Isocoma acradenia* ssp. *bracteosa*), bird's eyes (*Gilia tricolor*), common spikeweed (*Hemizonia pungens*), and cream cups

(*Platystemon californicus*). Most perennials (except spinescale) flower May through September. The annuals (and spinescale) are active January through April. These communities are typically found on sandy to loamy soils without surface alkalinity; largely on rolling, dissected alluvial fans with low relief. Valley saltbush scrub occurs in the southern and southwestern San Joaquin Valley and the Carrizo Plains of San Luis Obispo County. This once extensive community is now essentially exterminated by agricultural conversion, flood control, and groundwater pumping.

Valley saltbush scrub is located within the study area between Union Avenue and Wheeler Ridge south of Bakersfield.

**Wildflower field:** Wildflower fields exist on droughty, nutrient-poor sites associated with grasslands or oak woodlands, which occur on adjacent, more productive sites. Wildflower fields are herb dominated and produce annual wildflower displays. Dominance varies from site to site and from year to year at a particular site but may include California poppy (*Eschscholzia californica*), gilia (*Gilia* spp.), tidy tips (*Layia platyglossa*), miniature lupine (*Lupinus bicolor*), valley tassels and purple owl's clover (*O. purpurasens*). The range of wildflower field includes valleys and foothills of the Californian Floristic Province except the north coast (too wet) and desert (too dry) regions below about 610 m (2,000 ft) in the north and 1,219 to 1,524 m (4,000 to 5,000 ft) in the south.

Wildflower fields are located within the study area along I-5 near the Kern County-Los Angeles County border.

### 2.3.1 Sensitive Plant Species

This section describes the 43 sensitive plant species potentially occurring within the study area for the Bakersfield-to-Los Angeles region. Sensitive plant species include those that have been afforded special status and/or recognition by federal and state resource agencies, as well as private conservation organizations. In general, the principal reason an individual taxon (species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution resulting in most cases from habitat loss. Sources used to determine the sensitive status of plant species include the CNDDDB (CDFG 2002) and the CNPS electronic inventory (Skinner and Pavlik 1994). These species are described in alphabetical order by the scientific name. Information regarding the habitat, distribution, flowering season, federal and state listing status, and occurrence probability is summarized in Table 2.3-1 following the species descriptions. Habitats that these species are typically found in are also given in Table 2.3-1 and the text below. All of these habitat types may not occur in the study area. The occurrence of suitable habitats in the study area was used in part to determine the occurrence probability for these species.

#### Mt. Pinos onion (*Allium howellii* var. *clokeyi*)

Mt. Pinos onion, a perennial, bulbiferous herb, is a CNPS List 1B species. It typically occurs in Great Basin sage scrub and pinyon-juniper woodland from 1,300 to 1,850 m (4,265 to 6,700 ft) elevation and flowers from April through June. This species is known from Santa Barbara and Ventura Counties and it may occur in Los Angeles County. The expected probability of occurrence of this species is low due to the limited occurrence of suitable habitat and the lack of high elevation habitats within the study area in Los Angeles County.

#### Spanish needle onion (*Allium shevockii*)

Spanish needle onion, a perennial, bulbiferous herb, is a CNPS List 1B species. It typically occurs in rocky soils in pinyon-juniper woodland and upper montane coniferous forest from 1,465 to 2,500 m (4,806 to 8,202 ft) elevation and flowers in May and June. This species is known from only three occurrences at Spanish Needle and in Sand Canyon in Kern County. The expected probability of occurrence of this

species in the study area is low because the only known occurrences of this species occur north of the project area in Kern County and due to the absence of suitable high elevation habitat.

San Gabriel manzanita (*Arctostaphylos gabrielensis*)

San Gabriel manzanita, an evergreen shrub, is a CNPS List 1B species. It typically occurs in rocky soils in chaparral near 1,500 m (4,921 ft) elevation and flowers in March. This species is known from Los Angeles County only from the Mill Creek Summit divide in the San Gabriel Mountains. The expected probability of occurrence of this species in the study area is low because the only known occurrence of this species occurs southeast of the study area and due to the absence of suitable high elevation habitat.

Kusche's sandwort (*Arenaria macradenia* var. *kusche*)

Kusche's sandwort, a perennial herb, is a CNPS List 1B species. It typically occurs in granitic soils in openings in chaparral from 1,220 to 1,695 m (4,003 to 5,561 ft) elevation and flowers in June and July. This species is known from only five occurrences in Los Angeles County. Current threats to this species include land management, road maintenance, and vehicles. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Greata's aster (*Aster greatae*)

Greata's aster, a perennial, rhizome-forming herb, is a CNPS List 1B species. It typically occurs in moist soils in broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland from 300 to 2,010 m (984 to 6,954 ft) elevation and flowers from June through October. This species is known to occur in Los Angeles County. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Braunton's milk-vetch (*Astragalus brauntonii*)

Braunton's milk-vetch, a perennial herb, was listed as federally endangered on January 29, 1997, and is a CNPS List 1B species. It typically occurs in recent burns or disturbed areas with carbonate soils in closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grassland from 4 to 640 m (13 to 2,100 ft) elevation and flowers from February through July. This species is known from less than 10 occurrences in Los Angeles County, Orange, and Ventura Counties. Current threats to this species include development and alteration of local fire regimes. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*)

Lancaster milk-vetch, a perennial herb, is a CNPS List 1B species. It typically occurs in chenopod scrub near 700 m (2,379 ft) elevation and flowers from March through May. In California, this species is known only from the Lancaster area in Los Angeles County. This milk-vetch also occurs in Arizona and Nevada. The expected probability of occurrence of this species in the study area is moderate due to a historic record, but the limited presence of suitable habitat in the project vicinity.

Lancaster milk-vetch is located along Sierra Highway in the eastern portion of the study area based on two undated herbarium records.



Parish's brittlescale (*Atriplex parishii*)

Parish's brittlescale, an annual herb, is a CNPS List 1B species. It typically occurs in chenopod scrub, playas, and vernal pools from 25 to 1,900 m (82 to 6,234 ft) elevation and flowers from June through October. This species is currently known only from Riverside County and Baja California, but historically also occurred in Los Angeles County, Orange, San Bernardino, and San Diego Counties. Current threats to this species include development, agricultural conversion, and grazing. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat and its extirpation from Los Angeles County.

Davidson's saltscale (*Atriplex serenana* var. *davidsonii*)

Davidson's saltscale, an annual herb, is a CNPS List 1B species. It typically occurs in alkaline soils in coastal bluff scrub and coastal scrub from 10 to 200 m (33 to 656 ft) elevation and flowers from April through October. This species is currently known only from Orange, Riverside, San Diego, and Ventura Counties, Santa Catalina and Santa Rosa Islands, and Baja California. It is unknown whether or not this species occurs in Los Angeles County. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat.

Bakersfield smallscale (*Atriplex tularensis*)

Bakersfield smallscale, an annual herb, is a federal Species of Concern (SOC), was listed as state endangered in January 1987, and is a CNPS List 1B species. It typically occurs in chenopod scrub and alkali meadows from 90 to 200 m (295 to 656 ft) elevation and flowers from June through November. This species currently may be present in Kern County, but an undated (historic) herbarium record of this species has not been confirmed by direct field observation. Current threats to this species include lowering of the water table and hybridization with bractscale (*Atriplex serenana*). The expected probability of occurrence of this species in the study area is moderate due to a historic record of this species, but the limited presence of suitable habitat and its potential extirpation from Kern County.

Bakersfield smallscale is located in the study area near Union Avenue near Bakersfield based on an undated herbarium record.

Nevin's barberry (*Berberis nevini*)

Nevin's barberry, an evergreen shrub, was listed as federally endangered on October 13, 1998, state endangered in January 1987, and is a CNPS List 1B species. It typically occurs in sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub from 290 to 1,575 m (951 to 5,167 ft) elevation and flowers in March and April. This species is currently known to occur in Los Angeles, Riverside, San Bernardino, and San Diego Counties. Current threats to this species include development and road maintenance. The Angeles National Forest has established management guidelines for this species. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Nevin's barberry is located in the study area along I-5 in the vicinity of Sylmar based on an undated herbarium record.

Slender mariposa lily (*Calochortus clavatus* var. *gracilis*)

Slender mariposa lily, a perennial, bulbiferous herb, is a CNPS List 1B species. It typically occurs in chaparral and coastal scrub from 360 to 1,000 m (1,181 to 3,281 ft) elevation and flowers from March through May. This species is currently known from nine occurrences in Los Angeles County. The major threat to this species is development. The expected probability of occurrence of this species in the study

area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Slender mariposa lily is located in the study area along SR-14, Soledad Canyon Road and I-5 based on a 1940 occurrence of this species from the literature and direct observations in 1994 and 1995.

Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*)

Palmer's mariposa lily, a perennial, bulbiferous herb, is a CNPS List 1B species. It typically occurs in chaparral, lower montane coniferous forest, and wet meadows from 1,000 to 2,200 m (3,281 to 7,218 ft) elevation and flowers from May through July. This species is currently known from Kern, Los Angeles, Riverside, Santa Barbara, San Bernardino, San Luis Obispo, and Ventura Counties. The major threat to this species is grazing, primarily in wet meadows. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Plummer's mariposa lily (*Calochortus plummerae*)

Plummer's mariposa lily, a perennial, bulbiferous herb, is a CNPS List 1B species. It typically occurs in granitic and rocky soils in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland from 100 to 1,700 m (328 to 5,577 ft) elevation and flowers from May through July. This species is currently known from Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The major threat to this species is development. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Alkali mariposa lily (*Calochortus striatus*)

Alkali mariposa lily, a perennial, bulbiferous herb, is a federal SOC and a CNPS List 1B species. It typically occurs in chaparral, chenopod scrub, Mojavean desert scrub, and alkaline wet meadows from 70 to 1,595 m (230 to 5,233 ft) elevation and flowers from April through June. This species is currently known from Kern, Los Angeles, San Bernardino, and Tulare Counties, and it also occurs in Nevada. Current threats to this species include grazing, urbanization, and road construction. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Alkali mariposa lily is located in the study area along Sierra Highway near Palmdale and Lancaster based on an observation of this species in 1995..

Mt. Gleason Indian paintbrush (*Castilleja gleasonii*)

Mt. Gleason Indian paintbrush, a perennial, hemiparasitic herb, is a CNPS List 1B species. It typically occurs in granitic soils in lower montane coniferous forest and pinyon-juniper woodland from 1,160 to 2,170 m (3,806 to 7,119 ft) elevation and flowers in May and June. This species is currently known from less than 10 occurrences in Los Angeles County. Current threats to this species include proximity of this species to campgrounds, fuelwood cutting, and vehicles. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

California jewel-flower (*Caulanthus californicus*)

California jewel-flower, an annual herb, was listed as federally endangered on July 19, 1990, state endangered in January 1987, and is a CNPS List 1B species. It typically occurs in sandy soils in chenopod

scrub, pinyon-juniper woodland, and valley and foothill grassland from 65 to 1,000 m (213 to 3,281 ft) elevation and flowers from February through May. This species is currently known from Fresno, Kern, Santa Barbara, and San Luis Obispo Counties, but historically also occurred in King, Tulare, and Ventura Counties. Current threats to this species include agriculture, grazing, urbanization, energy development, and non-native plants. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

California jewel-flower is located in the study area along SR-58 based on 1986 citing in the literature.

Southern tarplant (*Centromadia* [*Hemizonia*] *parryi* ssp. *australis*)

Southern tarplant, an annual herb, is a CNPS List 1B species. It typically occurs along the margins of marshes, in vernal moist valley and foothill grassland, and in vernal pools from 0 to 425 m (0 to 1,394 ft) elevation and flowers from May through November. This species is currently known from Los Angeles, Orange, Santa Barbara, San Diego, and Ventura Counties, and also occurs in Baja California. Current threats to this species include population fragmentation, urbanization, vehicles, and foot traffic. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat in the project vicinity.

San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*)

San Fernando Valley spineflower, an annual herb, is a federal candidate for listing, was listed as state endangered in August 2001, and is a CNPS List 1B species. It typically occurs in sandy soils in coastal scrub from 150 to 1,220 m (10 to 4,003 ft) elevation and flowers from April through June. This species is currently known from Los Angeles and Ventura Counties, but historically also occurred in Orange County. The major threat to this species is urbanization and other development. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

San Fernando Valley spineflower is located in the study area along I-5 and in Burbank along San Fernando Road, and along Soledad Canyon Road based on undated herbarium records.

Parry's spineflower (*Chorizanthe parryi* var. *parryi*)

Parry's spineflower, an annual herb, is a CNPS List 3 species. It typically occurs in sandy or rocky soils in openings in chaparral and coastal scrub from 40 to 1,705 m (131 to 5,594 ft) elevation and flowers from April through June. This species is currently known from Los Angeles, Riverside, and San Bernardino Counties. The current major threat to this species is urbanization. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Parry's spineflower is located in the study area in the Antelope Valley based on one undated herbarium record.

White-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*)

White-bracted spineflower, an annual herb, is a CNPS List 1B species. It typically occurs in sandy soils in Mojavean desert scrub and pinyon-juniper woodland from 300 to 1,200 m (984 to 3,937 ft) elevation and flowers from April through June. This species is currently known from Los Angeles, Riverside and San Bernardino Counties. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Santa Susana tarplant (*Deinandra minthornii*)

Santa Susana tarplant, a deciduous shrub, is a CNPS List 1B species. It typically occurs in rocky soils in chaparral and coastal scrub from 280 to 760 m (919 to 2,493 ft) elevation and flowers from July through November. This species is currently known from Los Angeles and Ventura Counties. The major threat to this species is development. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Recurved larkspur (*Delphinium recurvatum*)

Recurved larkspur, a perennial herb, is a CNPS List 1B species. It typically occurs in alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland from 3 to 750 m (10 to 2,461 ft) elevation and flowers from March through May. This species is currently known from Alameda, Contra Costa, Fresno, King, Kern, Madera, Merced, Monterey, Solano, San Luis Obispo, and Tulare Counties, and has been extirpated from Colusa County. Current threats to this species include grazing and agriculture. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Slender-horned spineflower (*Dodecahema leptoceras*)

Slender-horned spineflower, an annual herb, was listed as federally endangered on September 28, 1987, state endangered in January 1982, and is a CNPS List 1B species. It typically occurs in sandy soils in chaparral, cismontane woodland, and alluvial fan sage scrub from 200 to 760 m (656 to 2,493 ft) elevation and flowers from April through June. This species is currently known from Los Angeles, Riverside, and San Bernardino Counties. Current threats to this species include urbanization, stream channelization, development, sand and gravel mining, flood control, and non-native plants. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Slender-horned spineflower is located along I-5 and Soledad Canyon Road based on an undated herbarium record and observations in 1991.

Many-stemmed dudleya (*Dudleya multicaulis*)

Many-stemmed dudleya, a perennial herb, is a CNPS List 1B species. It typically occurs in clay soils in chaparral, coastal scrub, and valley and foothill grassland from 15 to 790 m (49 to 2,592 ft) elevation and flowers from April through July. This species is currently known from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Current threats to this species include development, road construction, grazing and recreation. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Kern buckwheat (*Eriogonum kennedyi* var. *pinicola*)

Kern buckwheat, a perennial herb, is a CNPS List 1B species. It typically occurs in clay soils in chaparral and pinyon-juniper woodland from 1,340 to 1,950 m (4,396 to 6,398 ft) elevation and flowers in May and June. This species is currently known from only three occurrences on Sweet Ridge in Kern County. Current threats to this species include wind energy development and vehicles. The expected probability of occurrence of this species in the study area is low due to the limited occurrence of suitable, high elevation habitat and because the only known occurrences are to the north of the project area.



Fort Tejon woolly sunflower (*Eriophyllum lanatum* var. *hallii*)

Fort Tejon woolly sunflower, a perennial herb, is a CNPS List 1B species. It typically occurs in chaparral, coastal scrub and cismontane woodland from 1,065 to 1,500 m (3,494 to 4,921 ft) elevation and flowers from May through July. This species is currently known from only three occurrences in Kern and Santa Barbara Counties. Current threats to this species include grazing and trampling. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Tejon poppy (*Eschscholzia lemmonii* ssp. *kernensis*)

Tejon poppy, an annual herb, is a CNPS List 1B species. It typically occurs in chenopod scrub and valley and foothill grassland from 160 to 1,000 m (525 to 3,281 ft) elevation and flowers from May through May. This species is currently known from Kern County. Current threats to this species include grazing and non-native plants. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)

Mesa horkelia, a perennial herb, is a CNPS List 1B species. It typically occurs in sandy or gravelly soils in chaparral, cismontane woodland, and coastal scrub from 70 to 810 m (230 to 2,657 ft) elevation and flowers from February through September. This species is currently known from Los Angeles, Orange, Santa Barbara, and San Luis Obispo Counties, but historically also occurred in Riverside, San Bernardino, San Diego, and Ventura Counties. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Comanche point layia (*Layia leucopappa*)

Comanche point layia, an annual herb, is a federal SOC and a CNPS List 1B species. It typically occurs in chenopod scrub and valley and foothill grassland from 100 to 350 m (328 to 1,148 ft) elevation and flowers in March and April. This species is currently known from Kern County. Current threats to this species include agriculture, development, and grazing. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Comanche point layia is located in the study area along SR-58 based on an undated herbarium record.

Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*)

Sagebrush loeflingia, an annual herb, is a CNPS List 2 species. It typically occurs in sandy soils in desert dunes, Great Basin scrub, and Sonoran desert scrub from 700 to 1,165 m (2,297 to 5,299 ft) elevation and flowers in April and May. This species is currently known from Inyo, Kern, Lassen, and Los Angeles Counties, Nevada, Oregon, and Wyoming. The expected probability of occurrence of this species in the study area is moderate due to a record of this species' occurrence, but the limited presence of suitable habitat in the vicinity.

Sagebrush loeflingia is located in the study area in the Antelope Valley based on an undated herbarium record.

Davidson's bush mallow (*Malacothamnus davidsonii*)

Davidson's bush mallow, a deciduous shrub, is a federal SOC and a CNPS List 1B species. It typically occurs in chaparral, cismontane woodland, coastal scrub and riparian woodland from 185 to 855 m (591 to 2,805 ft) elevation and flowers from June through January. This species is currently known from Los Angeles, Monterey, and San Luis Obispo Counties. The major threat to this species is currently urbanization. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Davidson's bush mallow is located in the study area along I-5, Soledad Canyon Road, and in Sylmar along San Fernando Road based on observations in 1977 and a 1932 herbarium record.

Calico monkeyflower (*Mimulus pictus*)

Calico monkeyflower, an annual herb, is a federal SOC and a CNPS List 1B species. It typically occurs in granitic soils in broadleaved upland forest and cismontane woodland from 100 to 1,300 m (328 to 4,265 ft) elevation and flowers from March through May. This species is currently known from Kern and Tulare Counties. The major threat to this species is currently grazing. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Calico monkeyflower is located in the study area along SR-58 based on undated herbarium records.

Flax-like monardella (*Monardella linoides* ssp. *oblonga*)

Flax-like monardella, a perennial, rhizome-forming herb, is a CNPS List 1B species. It typically occurs in lower and upper montane coniferous forests, and pinyon-juniper woodland from 900 to 2,470 m (2,953 to 8,104 ft) elevation and flowers from June through August. This species is currently known from less than 20 occurrences in Kern, Tulare, and Ventura Counties. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

San Joaquin woollythreads (*Monolopia congdonii*)

San Joaquin woollythreads, an annual herb, was listed as federally endangered on July 19, 1990, and is a CNPS List 1B species. It typically occurs in sandy soils in chenopod scrub and valley and foothill grassland from 60 to 800 m (197 to 2,625 ft) elevation and flowers from February through May. This species is currently known from Fresno, King, Kern, Santa Barbara, San Benito, and San Luis Obispo Counties, but historically also occurred in Tulare County. Current threats to this species include agricultural conversion, energy development, urbanization, trampling, vehicles, and grazing. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

San Joaquin woollythreads is located in the study area along SR-58 based on an undated herbarium record.

Spreading navarettia (*Navarettia fossalis*)

Spreading navarettia, an annual herb, was listed as federally threatened on October 13, 1998, and is a CNPS List 1B species. It typically occurs in chenopod scrub and assorted shallow, freshwater marshes from 30 to 1,300 m (98 to 4,265 ft) elevation and flowers from April through June. This species is currently known from Los Angeles, Riverside, and San Diego Counties, and in Baja California, but historically also occurred in San Luis Obispo County. Current threats to this species include agriculture,

urbanization, road construction, flood control, vehicles, and grazing. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat in the project vicinity.

Piute Mountains navarretia (*Navarretia setiloba*)

Piute Mountains navarretia, an annual herb, is a CNPS List 1B species. It typically occurs in clay or gravelly loam soils in cismontane woodland, pinyon-juniper woodland, and valley and foothill grassland from 305 to 2,100 m (1,001 to 6,890 ft) elevation and flowers from April through June. This species is currently known from Kern and Tulare Counties. Current threats to this species include residential development and vehicles. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*)

Short-joint beavertail, a stem succulent shrub, is a CNPS List 1B species. It typically occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland from 425 to 1,800 m (1,394 to 5,906 ft) elevation and flowers from April through June. This species is currently known from Los Angeles and San Bernardino Counties. Current threats to this species include urbanization, mining, horticultural collecting, grazing, and vehicles. The Angeles National Forest has established management guidelines for this species. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records in the project vicinity.

Bakersfield cactus (*Opuntia basilaris* var. *treleasei*)

Bakersfield cactus, a stem succulent shrub, was listed as federally endangered on July 19, 1990, state endangered in January 1990, and is a CNPS List 1B species. It typically occurs in sandy or gravelly soils in chenopod scrub, cismontane woodland, and valley and foothill grassland from 90 to 550 m (295 to 1,084 ft) elevation and flowers in May. This species is currently known from Kern County. Current threats to this species include agricultural conversion, energy development, urbanization (especially in the Bakersfield area), vehicles, and grazing. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Bakersfield cactus is located in the study area along Union Avenue near Bakersfield and along SR-58 based on direct observations in 1981, 1989 and 1995.

California Orcutt grass (*Orcuttia californica*)

California Orcutt grass, an annual herb, was listed as federally endangered on August 3, 1993, state endangered in September 1979, and is a CNPS List 1B species. It typically occurs in vernal pools from 15 to 660 m (49 to 2,165 ft) elevation and flowers from April through August. This species is currently known from less than 20 occurrences in Los Angeles, Riverside, San Diego, and Ventura Counties, and Baja California. Current threats to this species include agriculture, development, non-native plants, grazing, and vehicles. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat in the project vicinity.

California chalk-moss (*Pterygoneurum californicum*)

California chalk-moss, a moss, is a CNPS List 1B species. It typically occurs in chenopod scrub and alkali soils in valley and foothill grassland from 10 to 100 m (33 to 328 ft) elevation. This species may have been extirpated from Kern County, though habitat for this species exists in this area, particularly in alkali scrub preserves. Current threats to this species include urbanization and agriculture in the San Joaquin

Valley. The expected probability of occurrence of this species in the study area is low due to its presumed extirpation from Kern County.

Piute Mountains jewel-flower (*Streptanthus cordatus* var. *piutensis*)

Piute Mountains jewel-flower, a perennial herb, is a CNPS List 1B species. It typically occurs in clay or metamorphic soils in broadleaved upland forest, closed-cone conifer forest, and pinyon-juniper woodland from 1,095 to 1,735 m (3,593 to 5,692 ft) elevation and flowers from May through July. This species is currently known from less than 10 occurrences in Kern County. The expected probability of occurrence of this species in the study area is low due to the limited presence of suitable, high-elevation habitat in the project vicinity.

Mason's neststraw (*Stylocline masonii*)

Mason's neststraw, an annual herb, is a federal SOC and is a CNPS List 1B species. It typically occurs in sandy soils in chenopod scrub and pinyon-juniper woodland from 100 to 1,200 m (328 to 3,937 ft) elevation and flowers from March through May. This species is currently known from Kern, Los Angeles, Monterey, and San Luis Obispo Counties. Current threats to this species include development and habitat disturbance. The expected probability of occurrence of this species in the study area is high due to a record of this species' occurrence and the presence of suitable habitat in the vicinity.

Mason's neststraw is located in the study area along Soledad Canyon Road based on a 1991 herbarium record.

**Table 2.3-1**  
**Sensitive Plants Potentially Occurring in the Bakersfield-to-Los Angeles Region**  
**of the High Speed Rail Project**

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Occurrence Probability
<i>Allium howellii</i> var. <i>clokeyi</i> <sup>2</sup> Mt. Pinos onion	Great Basin scrub, pinyon and juniper woodland, 1,300-1,850 m (4,265-6,070 ft).	April to June	Fed: None CA: None CNPS: 1B	Low Limited suitable habitat present onsite.
<i>Allium shevockii</i> <sup>2</sup> Spanish needle onion	Pinyon and juniper woodland, upper montane coniferous forest. 1,465-2,500 m (4,806-8,202 ft).	May to June	Fed: None CA: None CNPS: 1B	Low Limited suitable habitat present onsite.
<i>Arctostaphylos gabrielensis</i> <sup>2</sup> San Gabriel manzanita	Chaparral (rocky soils). 1,500 m (4,921 ft).	March	Fed: None CA: None CNPS: 1B	Low Limited suitable habitat present onsite.
<i>Arenaria macradenia</i> var. <i>kuschei</i> <sup>2</sup> Kusche's sandwort	Chaparral (openings, granitic soils). 1,220-1,695 m (4,003-5,561 ft).	June to July	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Aster greatae</i> <sup>2</sup> Greata's aster	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland/mesic soils 300-2,010 m (984-6,954 ft).	June to October	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.



Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Occurrence Probability
<i>Astragalus brauntonii</i> <sup>2</sup> Braunton's milk- vetch	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland/ recent burns or disturbed areas, usually carbonate soils. 4-640 m (13-2,100 ft).	February to July	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Astragalus preussii</i> var. <i>laxiflorus</i> <sup>1</sup> Lancaster milk-vetch	Chenopod scrub. Ranges in Los Angeles County to Nevada and Arizona. Alkaline clay flats or gravelly or sandy washes and along into draws in gullied badlands. 725 m (2,379 ft) in California.	March to May	Fed: None CA: None CNPS: 1B	Moderate Limited suitable habitat present onsite.
<i>Atriplex parishii</i> <sup>2</sup> Parish's brittle scale	Chenopod scrub, playas, vernal pools. 25-1,900 m (82-6,234 ft).	June to October	Fed: None CA: None CNPS: 1B	Low No suitable habitat present onsite.
<i>Atriplex serenana</i> var. <i>davidsonii</i> <sup>2</sup> Davidson's salt scale	Coastal bluff scrub, coastal scrub/alkaline soils. 10-200 m (33-656 ft).	April to October	Fed: None CA: None CNPS: 1B	Low No suitable habitat present onsite.
<i>Atriplex tularensis</i> <sup>1, 2</sup> Bakersfield small scale	Chenopod scrub, alkali meadow. Historically in valley sink scrub or with saltgrass. 90-200 m (295-656 ft).	June to November	Fed: SOC CA: END CNPS: 1B	Moderate Limited suitable habitat present onsite.
<i>Berberis nevini</i> <sup>1</sup> Nevin's barberry	Chaparral, cismontane woodland, coastal scrub, riparian scrub. On steep, north-facing slopes or in low grade sandy washes. 290-1,575 m (951-5,167 ft).	March to April	Fed: Endangered CA: END CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Calochortus clavatus</i> var. <i>gracilis</i> <sup>1, 2</sup> Slender mariposa lily	Chaparral, coastal scrub. Endemic to Los Angeles County. Shaded foothill grassy slopes within other habitat. 360-1,000 m (1,181-3,281 ft).	March to May	Fed: None CA: None CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Calochortus palmeri</i> var. <i>palmeri</i> <sup>2</sup> Palmer's mariposa lily	Chaparral, lower montane coniferous forest, meadows and seeps /mesic. 1,000-2,200 m (3,281-7,218 ft).	May to July	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Calochortus plummerae</i> <sup>2</sup> Plummer's mariposa lily	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grasslands /granitic, rocky. 100-1,700 m (328-5,577 ft).	May to July	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Calochortus striatus</i> <sup>1</sup> Alkali mariposa lily	Chaparral, chenopod scrub, Mojavean desert scrub, meadows. Alkaline meadows and ephemeral washes. 70-1,595 m (230-5,233 ft).	April to June	Fed: SOC CA: None CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Castilleja gleasonii</i> <sup>2</sup> Mt. Gleason Indian paintbrush	Lower montane coniferous forest, pinyon and juniper woodland/granitic soils. 1,160-2,170 m (3,806-7,119 ft).	May to June	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Occurrence Probability
<i>Caulanthus californicus</i> <sup>1, 2</sup> California jewel-flower	Chenopod scrub, valley and foothill grassland, pinyon juniper woodland. Historically from various valley habitats in both the Central Valley and Carrizo Plain. 65-1,000 m (213-3,281 ft).	February to May	Fed: Endangered CA: END CNPS:1B	High Suitable habitat present onsite and record in vicinity.
<i>Centromadia</i> [ <i>Hemizonia</i> ] <i>parryi</i> ssp. <i>australis</i> <sup>2</sup> Southern tarplant	Marshes and swamps (margins), valley and foothill grasslands (vernally mesic), vernal pools. 0-425 m (0-1,394 ft).	May to November	Fed: None CA: None CNPS: 1B	Low No suitable habitat present onsite.
<i>Chorizanthe parryi</i> var. <i>fernandina</i> <sup>1, 2</sup> San Fernando Valley spineflower	Coastal scrub. Formerly known from Southern California. Sandy soils. 3-1,220 m (10-4,003 ft).	April to June	Fed: Candidate CA: END CNPS:1B	High Suitable habitat present onsite and record in vicinity.
<i>Chorizanthe parryi</i> var. <i>parryi</i> <sup>1</sup> Parry's spineflower	Chaparral, coastal scrub/sandy or rocky soils, openings. 40-1,705 m (131-5,594 ft)	April to June	Fed: None CA: None CNPS: 3	High Suitable habitat present onsite and record in vicinity.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> <sup>2</sup> White-bracted spineflower	Mojavean desert scrub, pinyon and juniper woodland. 300-1,200 m (984-3,937 ft).	April to June	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Deinandra minthornii</i> <sup>2</sup> Santa Susana tarplant	Chaparral, coastal scrub/rocky soils. 280-760 m (919-2,493 ft).	July to November	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Delphinium recurvatum</i> <sup>2</sup> Recurved larkspur	Chenopod scrub, cismontane woodland, valley and foothill grassland/alkaline soils. 3-750 m (10-2,461 ft).	March to May	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Dodecahema leptoceras</i> <sup>1</sup> Slender-horned spineflower	Chaparral, coastal scrub (alluvial fan sage scrub). Historically from Los Angeles, Riverside, and San Bernardino Counties; Extirpated from much of range. Flood deposited terraces and washes; associated with <i>Encelia</i> , <i>Dalea</i> , <i>Lepidospartum</i> , etc. 200-760 m (656-2,493 ft).	April to June	Fed: Endangered CA: Endangered CNPS:1B	High Suitable habitat present onsite and record in vicinity.
<i>Dudleya multicaulis</i> <sup>2</sup> Many-stemmed dudleya	Chaparral, coastal scrub, valley and foothill grasslands /often clay soils. 15-790 m (49-2,592 ft).	April to July	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Eriogonum kennedyi</i> var. <i>pinicola</i> <sup>2</sup> Kern buckwheat	Chaparral, pinyon and juniper woodland. 1,340-1,950 m (4,396-6,398 ft).	May to June	Fed: None CA: None CNPS: 1B	Low Limited suitable habitat present onsite.
<i>Eriophyllum lanatum</i> var. <i>hallii</i> <sup>2</sup> Fort Tejon woolly sunflower	Chaparral, cismontane woodland. 1,065-1,500 m (3,494-4,921 ft).	May to July	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Occurrence Probability
<i>Eschscholzia lemmonii</i> ssp. <i>kernensis</i> <sup>2</sup> Tejon poppy	Chenopod scrub, valley and foothill grassland. 160-1,000 m (525-3,281 ft).	March to May	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Horkelia cuneata</i> ssp. <i>Puberula</i> <sup>2</sup> Mesa horkelia	Chaparral, cismontane woodland, coastal scrub/sandy or gravelly soils. 70-810 m (230-2,657 ft).	February to September	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Layia leucopappa</i> <sup>1</sup> Comanche point layia	Chenopod scrub, valley and foothill grassland. Endemic to Kern County. Dry hills in white-gray clay soils, often with weedy grasses. 100-350 m (328-1,148 ft).	March to April	Fed: SOC CA: None CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> <sup>1</sup> Sagebrush loeflingia	Desert dunes, Great Basin scrub, Sonoran desert scrub/sand soils. 700-1,615 m (2,297-5,299 ft)	April to May	Fed: None CA: None CNPS: 2	Moderate Record in vicinity, but limited suitable habitat present.
<i>Malacothamnus davidsonii</i> <sup>1</sup> Davidson's bush mallow	Coastal scrub, riparian woodland, chaparral. Sandy washes. 180-855 m (591-2,805 ft).	June to January	Fed: SOC CA: None CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Mimulus pictus</i> <sup>1</sup> Calico monkeyflower	Broadleafed upland forest, cismontane woodland. Known only from Kern and Tulare Counties. In bare ground around gooseberry bushes or around granite rock outcrops. 100-1,300 m (328-4,265 ft).	March to May	Fed: SOC CA: None CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Monardella linoides</i> ssp. <i>oblonga</i> <sup>2</sup> Flax-like monardella	Upper and lower montane coniferous forest, pinyon and juniper woodland. 900-2,470 m (2,953-8,104 ft).	June to August	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Monolopia congdonii</i> <sup>1</sup> San Joaquin woollythreads	Chenopod scrub and valley and foothill grassland. Endemic to San Joaquin Valley. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. 60-800 m (197-2,625 ft).	February to May	Fed: Endangered CA: None CNPS: 1B	High Suitable habitat present onsite and record in vicinity.
<i>Navarretia fossalis</i> <sup>2</sup> Spreading navarretia	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, and vernal pools. 30-1,300 m (98-4,265 ft).	April to June	Fed: Threatened CA: None CNPS: 1B	Low No suitable habitat present onsite.
<i>Navarretia setiloba</i> <sup>2</sup> Piute Mountains navarretia	Cismontane woodland, pinyon and juniper woodland, valley and foothill grassland/clay or gravelly loam. 305-2,100 m (1,001-6,890 ft).	April to June	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.
<i>Opuntia basilaris</i> var. <i>brachyclada</i> <sup>2</sup> Short-joint beavertail	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. 425-1800 m (1,394-5,906 ft).	April to June	Fed: None CA: None CNPS: 1B	Moderate Suitable habitat present onsite.

Scientific Name Common Name	Habitat and Distribution	Flowering Season	Status Designation	Occurrence Probability
<i>Opuntia basilaris</i> var. <i>treleasei</i> <sup>1</sup> Bakersfield cactus	Chenopod scrub, valley and foothill grassland, cismontane woodland, endemic to Kern County. Coarse or cobbly well-drained granitic sand on bluffs, low hills, and flats within grassland. 90-550 m (295-1,084 ft).	May	Fed: Endangered CA: END CNPS:1B	High Suitable habitat present onsite and record in vicinity.
<i>Orcuttia californica</i> <sup>2</sup> California Orcutt grass	Vernal pools. 15-660 m (49-2,165 ft).	April to August	Fed: Endangered CA: END CNPS: 1B	Low No suitable habitat present onsite.
<i>Pterygoneurum californicum</i> <sup>2</sup> California chalk-moss	Chenopod scrub, valley and foothill grassland/alkali soil. 10-100 m (33-328 ft).	Moss	Fed: None CA: None CNPS: 1B	Low Presumed extirpation from Kern County.
<i>Streptanthus cordatus</i> var. <i>piutensis</i> <sup>2</sup> Piute Mountains jewel-flower	Broadleaved upland forest, closed-cone coniferous forest, pinyon and juniper woodland/clay or metamorphic soils. 1,095-1,735 m (3,593-5,692 ft).	May to July	Fed: None CA: None CNPS: 1B	Low Limited suitable habitat present onsite.
<i>Stylocline masonii</i> <sup>1</sup> Mason's neststraw	Chenopod scrub, pinyon-juniper woodland. Sandy washes. 100-1,200 m (328-3,937 ft).	March to May	Fed: SOC CA: None CNPS:1B	High Suitable habitat present onsite and record in vicinity.
<b>General references:</b> <sup>1</sup> CNDDDB 2002, <sup>2</sup> Skinner and Pavlik 1994; Hickman (ed.) 1993				
<b>Federal designations:</b> (Federal Endangered Species Act, USFWS): <b>Endangered:</b> Federally listed, endangered <b>Threatened:</b> Federally listed, threatened <b>SOC:</b> Federal Species of Concern <b>Candidate:</b> Federal Candidate				
<b>State designations:</b> (California Endangered Species Act, CDFG) <b>END:</b> State-listed, endangered <b>THR:</b> State-listed, threatened <b>SOC:</b> State Species of Special Concern				
<b>California Native Plant Society (CNPS) Designations:</b> List 1A: Plants presumed extinct in California. List 1B: Plants rare and endangered in California and throughout their range. List 2: Plants rare and endangered in California, but more common elsewhere. List 3: More information is needed.				
<b>Definitions of Occurrence Probability:</b> L=Low Potential for Occurrence – No present or historical records cite the species' occurrence in or near the survey area, and the habitats strongly associated with the species do not occur in or near the vicinity. M= Moderate Potential for Occurrence – Either a historical record exists of the species in or near the survey area, or the habitats associated with the species occur in or near the survey vicinity. H= High Potential for Occurrence – A historical record cites the species in or near the survey area, and the habitats strongly associated with the species occur in or near the survey vicinity.				

## 2.4 SENSITIVE WILDLIFE

This section describes the sensitive wildlife species by type potentially occurring within the study area for the Bakersfield-to-Los Angeles region. Sensitive wildlife species include those that have been afforded special status and/or recognition by federal and state resource agencies, as well as private conservation organizations. In general, the principal reason an individual taxon (species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size or

geographical extent and/or distribution resulting in most cases from habitat loss. Sources used to determine the sensitive status of wildlife species include the CNDDDB (CDFG 2002) and the California Wildlife Habitat Relationships Database System (CDFG 2003). These wildlife species, their listing status, and potential for occurrence within the study area are summarized in Table 2.4-1 following the species descriptions.

#### 2.4.1 Invertebrates

No sensitive invertebrate species are expected to occur within the study area for the Bakersfield-to-Los Angeles region. The CNDDDB does not have any occurrences of these species within the study area.

#### 2.4.2 Fishes

Four sensitive fish species have the potential to occur within the study area for the Bakersfield-to-Los Angeles region. These species are described below.

##### Arroyo chub (*Gila orcutti*)

The arroyo chub is a small, freshwater fish and a California Species of Special Concern (CSC). The chub is primarily found in lowland habitats, and prefers freshwater streams and rivers with steady currents and emergent vegetation. This omnivorous species forms schools and prefers slower-moving pools and ponded areas of streams with mud or sand substrates. The expected probability of occurrence of this species in the study area is moderate due to records of this species' occurrence, but limited suitable habitat present.

Arroyo chub is located along sections of the Soledad Canyon Corridor according to observation records from 1993.

##### Santa Ana sucker (*Catostomus santaannae*)

The Santa Ana sucker is a federally listed threatened species and a CSC. Santa Ana suckers are generally found in small- to medium-sized permanent streams in water of varying depth. Flow is also variable, ranging from slight to swift. Usually found in clear water, they are able to tolerate seasonal turbidity. The Santa Ana sucker prefers substrates that are generally coarse and consist of gravel, rubble, and boulder, but are occasionally found on sandy or muddy substrates. The Santa Ana sucker is native to the following three drainages: the Los Angeles, San Gabriel and Santa Ana Rivers. The expected probability of occurrence of this species in the study area is moderate due to records of this species' occurrence, but limited suitable habitat present.

Santa Ana sucker is located along sections of the I-5: Tehachapi and Soledad Canyon Corridors according to observation records from 1975 and 1993.

##### Steelhead-Southern California Evolutionary Significant Unit (ESU) (*Oncorhynchus mykiss irideus*)

The steelhead is a CSC that seems to have greater physiological tolerances to the warmer and more variable conditions they commonly encounter in southern California streams. Higher elevation headwaters are the primary spawning and rearing areas for steelhead today, although lowland reaches may once have been important, especially in wet years. Southern steelhead have been either significantly depleted or extirpated in all rivers and streams in which they historically occurred such as Ventura, Santa Clara and Santa Ynez Rivers. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat and its potential extirpation from the Santa Clara River.



Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)

The unarmored threespine stickleback is a federal and state listed endangered species. The 1999 status of the unarmored threespine stickleback was unknown for the Santa Clara River populations and declining for the Shay Creek population. The fish appears to be seasonally abundant where found but is threatened by habitat degradation and the introduction of other stickleback species. Major threats to its survival include stream channelization, urbanization, agricultural development, water diversions, groundwater pumping, introduction of predators and competitors, off-road vehicle use, and chemical/oil spills. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat and its potential extirpation from the Santa Clara River.

**2.4.3 Reptiles and Amphibians**

Thirteen sensitive reptiles and amphibians have the potential to occur within the study area for the Bakersfield-to-Los Angeles region. These species are described below.

Arroyo toad (*Bufo californicus*)

The arroyo toad is a federally listed endangered species and a CSC. It inhabits slow-moving creeks or washes with intermittent streams and sandy gravel beaches and terraces. This animal prefers shallow pools with gravel bottoms for breeding. The arroyo toad burrows in sandy soils in riparian, scrub, woodlands, and other habitats associated with riparian areas during early winter and becomes active during late winter to forage. The expected probability of occurrence of this species in the study area is moderate due to records of this species' occurrence, but limited suitable habitat present.

Arroyo toad is located along sections of the I-5: Tehachapi Corridor according to observation records from 1994.

Blunt-nosed leopard lizard (*Gambelia sila*)

The blunt-nosed leopard lizard is a federal and state listed endangered species. Isolated populations of the blunt-nosed leopard lizard are found in a few areas in the San Joaquin Valley and the adjacent foothills of the Kettleman, Antelope and Panoche Hills, and the Tremblor Range. The Carrizo Plain also still supports some blunt-nosed leopard lizards. The historic range for the lizard was from Stanislaus County in the north to Kern County, the Tehachapi Mountains and the Sierra foothills in the south, and east to San Luis Obispo, Santa Barbara and Ventura Counties-the Kettleman and Carrizo Plains and Cuyama Valley in the west. This species prefers arid areas with scattered vegetation such as alkali flats, grasslands, washes, arroyos and canyon floors. This rare lizard lives and hibernates in abandoned ground squirrel and kangaroo rat burrows. It also makes shallow burrows under rocks and earth berms when small rodent burrows are scarce. Their decline in range and number is the result of a rapid increase in the leveling and cultivation of dry lands in their habitat; agricultural pest control and ground squirrel burrow fumigation are also hazards facing the blunt-nosed leopard lizard. The expected probability of occurrence of this species in the study area is moderate due to records of this species' occurrence, but the presence of limited suitable habitat.

Blunt-nosed leopard lizard is located along sections of the Union Avenue Corridor according to observation records from 1974.

California horned lizard (*Phrynosoma coronatum frontale*)

The California horned lizard is a CSC that originally had spotted distribution in the Sierra Nevada foothills to northern Los Angeles and Ventura Counties. This species occurs in several habitats types including gravelly-sandy substrate containing scattered shrubs, clearings in riparian woodlands, dry uniform

chamise chaparral and annual grassland with scattered perennial seepweed or saltbush. These lizards use small mammal burrows or burrow into loose soils under surface objects during extended periods of inactivity or hibernation. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat and no records of the species' occurrence.

California red-legged frog (*Rana aurora draytonii*)

The California red-legged frog is federally threatened and a CSC. This species' habitat is characterized by dense, shrubby riparian vegetation associated with deep, still or slow-moving water. Highly nocturnal, adults appear to face frequent attempts at predation by wading birds. Diet is highly variable and most prey that can be swallowed that are not distasteful are eaten, with larger frogs capable of taking larger prey. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat and no records of the species' occurrence.

Coast patch-nosed snake (*Salvadora hexalepis virgultea*)

The coast patch-nosed snake is a CSC which prefers brushy or shrubby vegetation, such as chaparral. This species is presumed to take refuge and perhaps overwinter in burrows or woodrat nests, so the presence of one or more burrow- or refuge-creating mammals may be necessary for this snake to be present. The expected probability of occurrence of this species' in the study area is low due to the absence of suitable habitat and no records of the species' occurrence.

Coast range newt (*Taricha torosa torosa*)

The coast range newt is a CSC which is known historically to be distributed in coastal drainages. Populations in southern California appear to be highly fragmented, even historically. Coast range newts frequent terrestrial habitats, but breed in ponds, reservoirs and slow-moving streams. The expected probability of occurrence of this species in the study area is low due to the absence of suitable habitat and no records of the species' occurrence.

San Bernardino mountain kingsnake (*Lampropeltis zonata parvarubra*)

The San Bernardino mountain kingsnake is a CSC restricted to the San Gabriel, San Bernardino and San Jacinto Mountains of southern California. The mountain kingsnake occurs in a variety of habitats, including valley-foothill hardwood, hardwood-conifer, mixed and montane chaparral, valley-foothill riparian, coniferous forests, and wet meadows. The rocky outcrops or talus likely provide hibernation and refuge as well as food resources such as lizards, smaller snakes, nestling birds, bird eggs, and small mammals. Populations are currently threatened by collecting and potentially detrimental effects of logging activities. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no record of this species' occurrence.

San Diego horned lizard (*Phrynosoma coronatum blainvillii*)

The San Diego horned lizard is a FSO and CSC. It is a small, spiny, somewhat rounded lizard that occurs primarily in open or sparse scrub and chaparral communities. This species prefers loose, friable soil for burrowing. Three factors have contributed to the decline of this species: loss of habitat, overcollecting, and the introduction of exotic ants. In some places, especially adjacent to urban areas, introduced ants have displaced the native species on which the lizard feeds (Hix 1990). The expected probability of occurrence of this species in the study area is high due to records of this species' occurrence and the presence of suitable habitat in the vicinity.

San Diego horned lizard is located along sections of the Antelope Valley Corridor, I-5: Tehachapi Corridor, Palmdale Station Siding, and Soledad Canyon Corridor and in the Palmdale Station area according to observation records from 1980 and 1986.

Silvery (California) legless lizard (*Anniella pulchra pulchra*)

The silvery legless lizard is a CSC which is a fossorial animal that constructs burrows in loose soil with a high sand fraction. Legless lizards appear to be active mostly during the morning and evening at which time they may rest just beneath the surface of the sunlight-warmed substrate. Adult and juvenile lizards are insectivorous and subsist largely on larval insects, adult beetles, termites and spiders. The legless lizard is known from Lancaster in the Antelope Valley. The expected probability of occurrence of this species in the study area is low due to limited suitable habitat and no records of the species' occurrence.

Tehachapi slender salamander (*Batrachoseps stebbinsi*)

The Tehachapi slender salamander is a FSOC and a state-listed threatened species. This species is uncommon in suitable habitat in a small number of isolated localities in the Piute and Tehachapi Mountains of Kern County and perhaps in Los Angeles and Ventura Counties. The salamander appears to prefer north-facing talus slopes in valley-foothill hardwood-conifer and valley-foothill riparian habitats at elevations from 760 to 1,500 m (2,500 to 5,000 ft). The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Tehachapi slender salamander is located along sections of the SR-58 Corridor according to observation records from 1980.

Two-striped garter snake (*Thamnophis hammondi*)

The two-striped garter snake is a CSC and is considered locally rare in southwestern California. It occurs primarily in wetlands, and is found in freshwater marsh and riparian habitats with perennial water. The two-striped garter snake feeds on small fish, frogs, and tadpoles. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Two-striped garter snake is located along sections of the Soledad Canyon Corridor according to observation records from 1995.

Western pond turtle (*Clemmys marmorata*)

The western pond turtle is a CSC and is a distinct taxon. This species is an aquatic turtle that usually leaves the aquatic site to reproduce, aestivate, and overwinter. Western pond turtles require some slow-water aquatic habitat and are uncommon in high gradient streams. Recent field work indicates that only six to eight viable populations remain south of the Santa Clara River system in California. The expected probability of occurrence of this species in the study area is low due to limited suitable habitat and no records of the species' occurrence.

Western spadefoot (*Scaphiopus hammondi*)

The western spadefoot toad is a FSOC and a CSC. The western spadefoot inhabits grassland, coastal sage scrub, and other habitats with open sandy gravel soils. This secretive species is rarely seen outside the breeding season. It breeds in vernal pools and in temporary ponds/pools associated with river bottoms and floodplains. The western spadefoot toad is primarily a species of the lowlands, frequenting washes, floodplains of rivers, alluvial fans, and alkali flats (Stebbins 1985). The expected probability of

occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Western spadefoot is located along sections of the Soledad Canyon Corridor according to observation records from 1998.

#### 2.4.4 Birds

Twenty sensitive bird species have the potential to occur within the study area for the Bakersfield-to-Los Angeles region. These species are described below.

##### Bell's sage sparrow (*Amphispiza belli belli*)

Bell's sage sparrow is a CSC. The Bell's subspecies of the sage sparrow occurs primarily along the coast ranges and foothills of California, from Trinity County to the Mexican border. This resident species is uncommon though widespread in southern California, with population declines in the more coastal areas attributed to the loss of habitat. The Bell's sage sparrow typically occurs in variety of scrub habitats. It frequently is found in relatively open chaparral, especially where dominated by chamise, but also occurs in sage scrub, especially in the more arid associations of this plant community. The expected probability of occurrence of this species in the study area is low due to limited suitable habitat and no records of the species' occurrence.

##### Burrowing owl (*Athene cunicularia*)

The burrowing owl is a CSC. Although quite common historically, the burrowing owl is now a fairly rare, very localized resident in southern California. It has undergone significant population declines throughout most of its California range, with the loss of suitable habitat being identified as one of the most important factors in the this species' disappearance. A small influx of burrowing owls typically occurs locally during the winter months, although most of these birds are breeders from north of the region. This small raptor requires fairly large expanses of relatively open level terrain, including grasslands, agricultural fields, dairies, and occasionally may use undisturbed edges of golf courses or airports. It typically feeds on insects, reptiles and small mammals. The expected probability of occurrence of this species in the study area is low due to limited suitable habitat and no records of the species' occurrence.

##### California condor (*Gymnogyps californianus*)

In 1967, the federal government listed the California condor as an endangered species and it was also listed as endangered in California in 1971. To aid in the recovery of condors, a captive breeding program was established in 1981 to provide captive-reared condors to release to the wild. In 1999, there were 34 birds in California and 22 birds in Arizona being closely monitored. The principle foraging areas have been the foothills bordering the southern San Joaquin Valley and axillary valleys in San Luis Obispo, Santa Barbara, Kern, and Tulare Counties. Typical foraging sites are located in grasslands or oak-savannah regions at lower elevations, and roosting and nesting sites are located at higher elevations on cliffs. The important foraging areas are primarily private grazing lands. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

California condor is located along sections of the I-5: Tehachapi Corridor according to observation records from 1981. The Sespe Condor Sanctuary is located approximately 10 miles west of the I-5: Tehachapi Corridor.

Coastal cactus wren (*Campylorhynchus brunneicapillus couesi*)

Coastal cactus wren is a CSC. This subspecies of the cactus wren is an uncommon to fairly common resident in coastal southern California from Ventura County to the Mexican border. The range of the coastal cactus wren historically extended north in Los Angeles County to include the coastal slopes of the San Gabriel Mountains, but it now quite scarce and very localized in this portion of its range. This species prefers sage scrub habitats with relatively mature patches of prickly pear or cholla cactus. The expected probability of occurrence of this species in the study area is low due to limited suitable habitat and no records of the species' occurrence.

Coastal California gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is federally listed as threatened and is a CSC. This species occurs throughout most of Baja California, but its range in the U.S. is limited to southern California, where it predominantly occurs only in coastal regions of highly urbanized Los Angeles, Orange, Riverside, and San Diego Counties (Atwood 1992). Very small populations also still occur in San Bernardino and Ventura Counties. In California, this species is an obligate resident of several distinct subassociations of the coastal sage scrub plant community. Brood parasitism by brown-headed cowbirds and loss of habitat to urban development have been cited as causes of the coastal California gnatcatcher population decline (Unitt 1984, Atwood 1990). The California population is estimated to be not more than 2,500 pairs (Hays 1995). The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Coastal California gnatcatcher is located along sections of the Burbank Station Siding and in the Burbank Airport area.

Cooper's hawk (*Accipiter cooperii*)

The Cooper's hawk is a CSC. Wintering cooper's hawks are frequently seen in southern California wooded urban areas as much as in native woodland communities. Preferred nesting habitats include oak and riparian woodlands, with willows, cottonwoods, and sycamores also frequently present. This raptor also seems to occasionally nest, at least in recent years, in urban parks and greenbelts as long as there are dense trees for cover. Cooper's hawks in the region prey on small birds and rodents that live in woodland and occasionally scrub and chaparral communities. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Cooper's hawk is located along sections of the Palmdale Station Siding and the Palmdale Station area according to observation records from 1980.

Ferruginous hawk (*Buteo regalis*)

The ferruginous hawk, a CSC, is an uncommon to fairly common winter visitor to southern California, although it is less common nearer the coast. This species forages over a variety of open habitats such as grasslands, rangeland and agricultural fields, especially where these habitats are relatively extensive. Favorite prey items include a variety of small mammals, such as ground squirrels, prairie dogs, and rabbits, as well as some reptiles, birds, and insects. The expected probability of occurrence of this species in the study area is low due to the presence of limited suitable habitat, but lack of records of this species' occurrence.



Golden eagle (*Aquila chrysaetos*)

The golden eagle, a CSC, is a rare to uncommon resident in southern California. It forages over a variety of open habitats such as grasslands, rangeland, high deserts, brushy and open wooded areas. This large raptor is generally absent from the immediate coast and urbanized areas. They are more widespread in winter when they may occur far from potential breeding habitat. Golden eagles require fairly remote, rugged canyons and mountains for nesting. They will seldom tolerate human activity near active nest sites. This species preys on a variety of mammals and other small animals, although, locally ground squirrels and rabbits make up a significant percentage of their diet. The expected probability of occurrence of this species in the study area is low due to limited suitable habitat and no records of the species' occurrence.

Le Conte's thrasher (*Toxostoma lecontei*)

The Le Conte's thrasher is a FSOC and a CSC. This bird is an uncommon to rare, local resident in southern California deserts from Inyo County south to the Mexican border, and in the western and southern San Joaquin Valley. It frequents desert washes and flats with scattered shrubs and large areas of open, sandy or alkaline terrain in desert wash, desert scrub, alkali desert scrub and desert succulent scrub habitats. This species is vulnerable to ORV activity, other disturbance and removal of shrubs for agricultural or other development. The expected probability of occurrence of this species in the study area is high due to records of this species' occurrence and the presence of suitable habitat in the vicinity.

Le Conte's thrasher is located along sections of the Palmdale Station Siding, Soledad Canyon Corridor, SR-58 Corridor and the Palmdale Station area according to observation records from 1920 and 1987.

Least Bell's vireo (*Vireo bellii pusillus*)

Now a rare and local summer resident of southern California's lowland riparian woodlands, the least Bell's vireo was formerly more common and widespread. In 1980, the state designated the least Bell's vireo as an endangered species; the federal government also listed the species as endangered in 1986. Surveys in 1987 indicated that there were only about 440 territorial males and 283 known breeding pairs in the United States (Franzreb 1989). The least Bell's vireo prefers mature riparian habitat with a dense understory of young willows, mule fat, blue elderberry, California rose, desert wild grape (*Vitis girdiana*), and a variety of other shrubby species. The vireo is generally found in riparian areas that are dominated by one or more willow species, especially where there is a mixed age composition. These areas frequently include other trees such as cottonwood or western sycamore, particularly where the canopy is within or immediately adjacent to an understory layer of vegetation (Salata 1983). While destruction of lowland riparian habitats has played a large role in bringing this species to its present precarious situation, brood parasitism by brown-headed cowbirds has been cited as the single most important factor in its decline (Garrett and Dunn 1981). Since being federally listed in 1986, the least Bell's vireo population has begun to recover. Local cowbird control programs have been very effective in maintaining some populations (Small 1994). Based on information from the USFWS, approximately 1,500 territories were located in 1995 (Hays 1995), although this population has continued to increase significantly in more recent years. The expected probability of occurrence of this species in the study area is high due to records of this species' occurrence and the presence of suitable habitat in the vicinity.

Least Bell's vireo is located along sections of the I-5: Tehachapi Corridor and Soledad Canyon Corridor according to observation records from 1978.

Loggerhead shrike (*Lanius ludovicianus*)

The loggerhead shrike, is a CSC, is an uncommon resident in southern California, which has undergone significant population declines during recent years, especially in the coastal portions of this region. This

species has also experienced serious declines throughout the eastern U.S. A small influx of birds typically occurs in southern California during winter months, although these are considered to belong to more northerly breeding populations. Shrikes typically inhabit a variety of open areas (e.g., grassland, rangeland, fallow agricultural fields), especially where there are scattered large shrubs or trees. This raptor-like songbird actually hunts small prey, including insects, reptiles and even small birds and mammals. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no records of the species' occurrence.

Merlin (*Falco columbarius*)

Merlin is a CSC. This small falcon is an uncommon winter visitor throughout most of southern California. For foraging, it frequents relatively open habitats such as grasslands, rangeland, agricultural fields, coastal estuaries, open woodlands, and scrub. As many as three subspecies may occur in the region. The merlin generally preys on a wide variety of birds up to the size of doves and pigeons, and has even been known to take bats. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no records of the species' occurrence.

Northern harrier (*Circus cyaneus*)

The northern harrier, a CSC, is a fairly common winter visitor throughout most of southern California, though non-breeding visitors occasionally remain in the region through the summer. This raptor's breeding population in the region has declined to very low numbers; it was historically much more common as a local breeder. It forages in a variety of open habitats, including salt and freshwater marshes, grasslands, agricultural fields, and open scrub. For nesting, the northern harrier requires protected marshes or open grassy meadows. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no records of the species' occurrence.

Prairie falcon (*Falco mexicanus*)

The prairie falcon, a CSC, is an uncommon winter visitor throughout much of southern California, and a rare to uncommon resident in the more arid interior regions of the state. It uses open habitats for foraging, such as grasslands, rangeland, agricultural areas and open scrub. For nesting, prairie falcons prefer cliffs or rocky outcroppings that are relatively close to open foraging areas. This species now nests very rarely west of the deserts, although they historically bred more regularly on the coastal slope. They prey on small birds, mammals, and reptiles. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no records of the species' occurrence.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)

Southern California rufous-crowned sparrow is a CSC. This small songbird is a relatively common resident of the foothills west of the deserts. Although the rufous-crowned sparrow's extensive range includes much of the southwestern U.S., the southern California subspecies has a limited range extending from Santa Barbara County to Baja California. It typically occupies rocky slopes, especially where a relatively open shrub cover dominated by California sagebrush is interspersed with grassy areas. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no records of the species' occurrence.

Southwestern willow flycatcher (*Empidonax traillii extimus*)

This subspecies of the willow flycatcher is listed as state and federally endangered. Historically, this songbird was a common summer resident, breeding throughout California. In 1997, the known breeding population was estimated at 300 to 500, with only a small percentage of this total occurring in California.

Factors contributing to this decline include habitat loss and degradation, and brown-headed cowbird parasitism. This bird also tends to be difficult to detect once breeding efforts are well underway (late June-mid July). Breeding habitat is restricted to riparian woodland, usually near surface water or saturated soil. The habitat structure is dense at breeding locations. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but no records of the species' occurrence.

Summer tanager (*Piranga rubra*)

The summer tanager, a CSC, is a rare and local summer resident of southern California in well-developed and extensive riparian woodlands, typically where mature cottonwoods and willows are present. The majority of breeding and foraging occur in these mature willows and cottonwoods. California's largest known population occurs on the South Fork Kern River. It is more common in the arid interior regions of the state, where it often nests in woodlands associated with broad canyons or floodplains. This songbird was historically fairly common along the Colorado River until significant losses of mature riparian habitat occurred in this area, due to clearing and lowering water tables. Brown-headed cowbird parasitism may also have contributed to the decline. These threats are universal throughout its range. The expected probability of occurrence of this species in the study area is moderate due to the presence of suitable habitat, but lack of any known records of this species' occurrence in the project vicinity.

Swainson's hawk (*Buteo swainsoni*)

The Swainson's hawk, a state threatened species is currently a very rare and local breeder in the southern California region. Swainson's hawks forage over grasslands, a rangeland agricultural areas, and other open habitats during migration to and from South America. They primarily feed on small rodents, reptiles, and large insects in these habitats. Swainson's hawks occasionally still breed in the extreme northern and eastern portions of southern California, where they typically use scattered trees or ranchyard groves surrounded by grasslands or agricultural areas. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Swainson's hawk is located along sections of the SR-58 Corridor according to observation records from 1991 and 1992.

Tricolored blackbird (*Agelaius tricolor*)

This species of blackbird is a CSC. Ninety-five percent of the world's population of this species occurs in California. Surveys indicate that populations are rapidly declining. Likely causes include land conversion, water diversion, and high levels of predation. This species is highly colonial, preferring to breed in large, dense groups. The majority of breeding colonies occur in freshwater marshes. Suitable breeding habitat includes cattails and bulrushes, as well as non-native thistles and mustards. The expected probability of occurrence of this species in the study area is low due to the lack of any known records of this species' occurrence and the limited presence of suitable habitat in the project vicinity.

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Formerly a rare summer resident, this species is now extirpated from much of southern California. The state of California designated the western yellow-billed cuckoo as endangered in 1988. Occasional sightings in coastal southern California suggest that very few breeding pairs may persist despite extensive habitat loss (Unitt 1984). Breeding yellow-billed cuckoos are restricted to extensive deciduous riparian thickets or forest with dense, low-level or understory foliage which occur along slow moving watercourses, backwaters, or seeps. Willows are almost always a dominant component of western

yellow-billed cuckoo nesting habitat. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Western yellow-billed cuckoo is located along sections of the Metrolink/UPRR: Sylmar Station Siding.

#### 2.4.5 Mammals

Eight sensitive mammal species have the potential to occur within the study area for the Bakersfield-to-Los Angeles region. These species are described below.

##### Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)

The Los Angeles pocket mouse is a CSC whose geographic range is restricted to lower elevation grasslands and coastal sage scrub associations in the Los Angeles Basin. The expected probability of occurrence of this species in the study area is low due to the presence of limited suitable habitat and no records of the species' occurrence.

##### Mohave ground squirrel (*Spermophilus mohavensis*)

The Mohave ground squirrel is a FSOC and a state-listed threatened species. The Mohave ground squirrel is restricted to the Mohave Desert in San Bernardino, Los Angeles, Kern and Inyo Counties. This species is rare throughout its range and populations in southwestern San Bernardino County appear to be extirpated. Optimal habitats are open desert scrub, alkali desert scrub and Joshua tree woodland, though this species is also known to feed in annual grasslands. The Mohave ground squirrel prefers sandy to gravelly soils, avoiding rocky areas. The squirrel has been found at elevations ranging from 505-1,525 m (1,800-5,000 ft). Populations are reduced by urban development, off-road vehicle use and agriculture. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Mohave ground squirrel is located along sections of the Antelope Valley Corridor, Palmdale Station Siding and in the Palmdale Station area according to observation records from 1985 and 1992.

##### San Diego desert woodrat (*Neotoma lepida intermedia*)

The San Diego desert woodrat occupies arid areas with sparse vegetation, especially those comprised of cactus and other thorny plants. This FSOC and CSC subspecies is restricted to the Pacific slope in a range that stretches from San Luis Obispo to northwestern Baja California. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

San Diego desert woodrat is located along sections of the I-5: Tehachapi Corridor according to observation records from 1992.

##### San Joaquin antelope squirrel (*Ammospermophilus nelsoni*)

The San Joaquin antelope squirrel is a FSOC and a state-listed threatened species. Historically, San Joaquin antelope squirrels ranged from western Merced County to the southern end of western San Joaquin Valley. They occupied the valley floor in Kern County and along the eastern edge northward to Tipton in Tulare County. Habitats of antelope squirrels consist of grasslands with moderate shrub cover which includes such species as saltbush, ephedra, bladder pod, goldenbush, snakeweed and others. Populations now exist primarily in marginal habitats of the low foothills and mountains of the western edge of the valley. Currently, populations of significant size exist only in western Kern County at Elk Hills and on portions of the Carrizo and Elkhorn plains. Conversion of native habitat to intensive forms of

agricultural development is the greatest threat to the population. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

San Joaquin antelope squirrel is located along sections of the I-5: Tehachapi Corridor according to observation records from 1980.

#### San Joaquin kit fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox is a federally-listed endangered species and a state-listed threatened species. San Joaquin kit foxes inhabit grasslands and scrublands, modified habitats including those with oil exploration and extraction equipment and wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards and grazed annual grasslands. Oak woodland, alkali sink scrubland and vernal pool and alkali meadow communities also provide habitat for kit foxes. Dens are scarce in areas with shallow soils. Kit foxes are thought to inhabit suitable habitat on the San Joaquin Valley floor and in the surrounding foothills of the coastal ranges, Sierra Nevada, and Tehachapi Mountains. The expected probability of occurrence of this species in the study area is high due to records of this species' occurrence and the presence of suitable habitat in the vicinity.

San Joaquin kit fox is located along sections of the I-5: Tehachapi Corridor, SR-58 Corridor, Union Avenue Corridor and Wheeler Ridge Corridor according to observation records from 1991.

#### San Joaquin pocket mouse

The San Joaquin pocket mouse is a FSOC. The pocket mouse occurs in dry, open grasslands or scrub areas on fine-textured soils between 350-600 m (1,100-2,000 ft) in the Central and Salinas Valleys. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

San Joaquin pocket mouse is located along sections of the I-5: Tehachapi Corridor, SR-58 Corridor and Union Avenue Corridor according to observation records from 1931, 1988, and 1992.

#### Tehachapi pocket mouse

The Tehachapi pocket mouse is a FSOC and CSC. The pocket mouse is known to occur from a few scattered localities from the Tehachapi Pass in the northeast to the area of Mt. Pinos on the southwest, and around Elizabeth, Hughes and Quail Lakes in the southeast. They are found between 1,067 and 1,829 m (3,500 and 6,000 ft). Habitat for this species is not well defined, but appears to be arid annual grassland, desert shrub communities and fallow grain fields. The expected probability of occurrence of this species in the study area is high due to records of this species' occurrence and the presence of suitable habitat in the vicinity.

Tehachapi pocket mouse is located along sections of the I-5: Tehachapi Corridor and SR-58 Corridor according to observation records from 1935, 1941, 1952, 1960, and 1980.

#### Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)

The Tipton kangaroo rat is a federal and state listed endangered species. Tipton kangaroo rats inhabit arid vegetative communities with level or nearly level terrain located within the floor of the Tulare Basin in the southern San Joaquin Valley. Higher densities of Tipton kangaroo rats are located where soils are soft, such as fine sands and sandy loams, and powdery soils of finer texture and of higher salinity. Terrain not subject to flooding is essential to sustain a population of Tipton kangaroo rats. Occurrences of Tipton kangaroo rats are limited to scattered, isolated clusters west of Tipton, Pixley and Earlimart and



in areas in southern Kern County. The expected probability of occurrence of this species in the study area is moderate due to the presence of limited suitable habitat and records of this species' occurrence.

Tipton kangaroo rat is located along sections of the Wheeler Ridge Corridor according to observation records from 1985.

**Table 2.4-1**  
**Sensitive Wildlife Potentially Occurring in the Bakersfield-to-Los Angeles Region of the High Speed Rail Project**

Scientific Name	Common Name	Listing	PFO	Comments
<b>CLASS</b>	<b>INVERTEBRATES</b>			
None				
<b>CLASS</b>	<b>FISHES</b>			
<i>Gila orcutti</i>	Arroyo chub	CSC	M	Los Angeles Basin south coastal streams. Slow water stream sections with mud or sand bottoms. Feed heavily on aquatic vegetation and associated invertebrates.
<i>Catostomus santaanae</i>	Santa Ana sucker	FT, CSC	M	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.
<i>Oncorhynchus mykiss irideus</i>	Steelhead-Southern California ESU	FE, CSC	L	Southern California streams, potentially including the Santa Clara River. Habitat includes high elevation headwaters for spawning and rearing.
<i>Gasterosteus aculeatus williamsoni</i>	Unarmored threespine stickleback	FE, SE	L	Weedy pools, backwaters, and among emergent vegetation of the stream edge in small southern California streams. Cool, (less than 24 C (75°), clear water with abundant vegetation.
<b>CLASS</b>	<b>REPTILES AND AMPHIBIANS</b>			
<i>Bufo californicus</i>	Arroyo toad	FE, CSC	M	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.
<i>Gambelia sila</i>	Blunt-nosed leopard lizard	FE, SE	M	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.
<i>Phrynosoma coronatum frontale</i>	California horned lizard	CSC	L	Occur in several habitats, including areas with an exposed gravelly-sandy substrate containing scattered shrubs, clearings in riparian woodlands, dry uniform

Scientific Name	Common Name	Listing	PFO	Comments
				chamise chaparral and annual grassland with scattered perennial seepweed or saltbush.
<i>Rana aurora draytonii</i>	California red-legged frog	FT, CSC	L	Dense, shrubby riparian vegetation associated with deep or slow-moving water.
<i>Salvadora hexalepis virgulata</i>	Coast patch-nosed snake	CSC	L	Low shrub structure of medium density. Overwinter and find refuge in burrows or woodrat nests.
<i>Taricha torosa torosa</i>	Coast range newt	CSC	L	Frequent terrestrial habitats, but breed in ponds, reservoirs and slow-moving streams.
<i>Lampropeltis zonata parvarubra</i>	San Bernardino mountain kingsnake	CSC	M	Occur in well illuminated canyons with rocky outcrops or rocky talus in association with bigcone spruce and various canyon chaparral species at lower elevations and with black oak, incense cedar, Jeffrey pine and ponderosa pine at higher elevations.
<i>Phrynosoma coronatum blainvillei</i>	San Diego horned lizard	CSC	H	Inhabits coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils.
<i>Anniella pulchra pulchra</i>	Silvery (California) legless lizard	CSC	L	Areas with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, pine-oak woodland or sycamores, cottonwoods or oaks that grow on stream terraces. Sandy loam soils of stabilized dunes seem especially favorable habitat.
<i>Batrachoseps stebbinsi</i>	Tehachapi slender salamander	FSOC, ST	M	Valley-foothill hardwood-conifer and valley-foothill riparian in the Piute and Tehachapi Mountains of Kern County. Prefers wet talus slopes or log-strewn hillsides with a steep, north-facing exposure.
<i>Thamnophis hammondi</i>	Two-striped garter snake	CSC	M	Coastal California from vicinity of Salinas to Northwest Baja California. From sea level to approximately 2,134 m (7,000 ft) elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.
<i>Clemmys marmorata</i>	Western pond turtle	CSC	L	Some slow-water aquatic habitat is required and are uncommon in high gradient streams. Hatchlings require shallow water habitat with relatively dense submergent or short emergent vegetation in which to forage.
<i>Scaphiopus hammondi</i>	Western spadefoot	FSOC, CSC	L	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.

Scientific Name	Common Name	Listing	PFO	Comments
<b>CLASS AVES</b>	<b>BIRDS</b>			
<i>Amphispiza belli belli</i>	Bell's sage sparrow	CSC	M	Coast ranges and foothills of California, from Trinity County to Mexican border. Occurs in scrub and chaparral habitats
<i>Athene cunicularia hypugea</i>	Burrowing owl	CSC	L	Rare, localized resident is southern California. Requires large expanses of open, level terrain, such as grasslands, agricultural fields and dairies.
<i>Gymnogyps californianus</i>	California condor	FE, SE	M	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 161 km (100 mi) from roost/nest.
<i>Campylorhynchus brunneicapillus couesi</i>	Coastal cactus wren	CSC	L	Coastal southern California from Ventura County to Mexican border. Prefers cactus scrub habitat.
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	FT, CSC	M	Obligate, permanent resident of coastal sage scrub below 762 m (2,500 ft) in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.
<i>Accipiter cooperii</i>	Cooper's hawk (nesting)	CSC (nesting)	M	Typically nests in woodland composed of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also live oaks.
<i>Buteo regalis</i>	Ferruginous hawk	CSC	L	Winter visitor to southern California. Forages in open habitats, such as grasslands, rangeland, and agricultural fields.
<i>Aquila chrysaetos</i>	Golden eagle	CSC	L	Rare to uncommon resident in southern California. Forages in open habitats, such as grasslands, rangeland, high desert, and woodlands. Require remote, rugged canyons and mountains for nesting.
<i>Toxostoma lecontei</i>	Le Conte's thrasher	FSOC, CSC	H	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 0.6-2.4 m (2-8 ft) above ground.

Scientific Name	Common Name	Listing	PFO	Comments
<i>Vireo bellii pusillus</i>	Least Bell's vireo (nesting)	FE, SE	H	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 610 m (2,000 ft). Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite.
<i>Lanius ludovicianus</i>	Loggerhead shrike	CSC	M	Uncommon resident in southern California. Inhabit open areas, such as grasslands, rangeland, and fellow agricultural fields.
<i>Falco columbarius</i>	Merlin	CSC	M	Uncommon winter visitor to southern California. Forages in open habitats, such as grasslands, rangeland, agricultural fields, coastal estuaries, open woodlands, and scrub.
<i>Circus cyaneus</i>	Northern harrier	CSC	M	Common winter visitor to southern California. Forages in open habitats, such as salt and freshwater marshes, grasslands, agricultural fields, and open scrub. Requires protected marshes or open grassy meadows for nesting.
<i>Falco mexicanus</i>	Prairie falcon	CSC	M	Uncommon winter visitor to southern California. Forages in open habitats, such as grasslands, rangeland, agricultural areas, and open scrub. Prefers cliffs or rocky outcroppings for nesting.
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	CSC	M	Common resident in southern California. Range extends from Santa Barbara County to Baja California. Occupies rocky slopes with scrub vegetation intermixed with grasslands.
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE	M	Uncommon resident in southern California. Breeding habitat is restricted to dense riparian woodland typically dominated by willows near surface water or saturated soil.
<i>Piranga rubra</i>	Summer tanager	CSC	M	Rare summer resident of southern California. Inhabits well-developed riparian woodlands, typically with mature cottonwoods and willows.
<i>Buteo swainsoni</i>	Swainson's hawk (nesting)	FSOC, ST	M	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.
<i>Agelaius tricolor</i>	Tricolored blackbird	CSC	L	Prefers to breed in colonies in freshwater marsh habitat, particularly where this habitat includes cattails and bulrushes.

Scientific Name	Common Name	Listing	PFO	Comments
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo (nesting)	SE	M	Riparian forest nester, along the broad, lower flood-bottom of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwood with lower story of blackberry, nettles, or wild grape.
<b>CLASS MAMMALIA</b>	<b>MAMMALS</b>			
<i>Spermophilus mohavensis</i>	Mohave ground squirrel	FSOC, ST	M	Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mohave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	CSC	L	Lower elevation grasslands and coastal sage scrub associations in the Los Angeles Basin. Geographic limits on the southwest are not clear, but probably lie somewhere near the Hollywood Hills.
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CSC	M	Coastal southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops and rocky cliffs and slopes.
<i>Ammospermophilus nelsonii</i>	San Joaquin antelope squirrel	FSOC, ST	M	Western San Joaquin Valley from 61-366 m (200-1,200 ft) in elevation on dry, sparsely vegetated loam soils. Dig burrows or use kangaroo rat burrows. Needs widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE, ST	H	Annual grasslands or grassy open spaces with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.
<i>Perognathus inornatus inornatus</i>	San Joaquin pocket mouse	FSOC	M	Typically found in grasslands and blue oak savannahs. Need friable soils.
<i>Perognathus alticola inexpectatus</i>	Tehachapi pocket mouse	FSOC, CSC	H	Arid annual grassland and desert shrub communities, but also found in fallow grain field and in Russian thistle. Burrows for cover and nesting. Aestivates and hibernates during extreme weather. Forages on open ground and under shrubs.



Scientific Name	Common Name	Listing	PFO	Comments
<i>Dipodomys nitratoideus nitratoideus</i>	Tipton kangaroo rat	FE, SE	M	Saltbush scrub and sink scrub communities in the Tulare Lake Basin of the Southern San Joaquin Valley. Needs soft friable soils which escape seasonal flooding. Digs burrows in elevated soil mounds at base of shrubs.
<b>Status Codes</b>  <b>Federal</b> <b>FE</b> = Federal listed; Endangered <b>FT</b> = Federal listed; Threatened <b>FPE</b> = Federal Proposed Endangered <b>FPT</b> = Federal Proposed Threatened <b>FSOC</b> = Federal Species of Concern  <b>State</b> <b>ST</b> = State-listed; Threatened <b>SE</b> = State-listed; Endangered  <b>CSC</b> = California Species of Special Concern		<b>Potential for Occurrence (PFO)</b> <b>L = Low Potential for Occurrence</b> – No present or historical records cite the species' occurrence in or near the survey area, and the habitats strongly associated with the species do not occur in or near the vicinity. <b>M = Moderate Potential for Occurrence</b> – Either a historical record cites the species' occurrence in or near the survey area, or the habitats associated with the species occur in or near the survey vicinity. <b>H = High Potential for Occurrence</b> – A historical record cites the species in or near the survey area, and the habitats strongly associated with the species occur in or near the survey vicinity. <b>Source:</b> California Natural Diversity Database (CNDDB 2002), Los Angeles, Hollywood, Burbank, Van Nuys, San Fernando, Oat Mountain, Newhall, Whitaker Peak, Liebre Mountain, Black Mountain, Lebec, Frazier Mountain, Pastoria Creek, Grapevine, Mettler, Weed Patch, Lamont, Gosford, Mint Canyon, Agua Dulce, Sleepy Valley, Ritter Ridge, Acton, Pacifico Mountain, Palmdale, Lancaster West, Lancaster East, Rosamond, Soledad Mountain, Mojave, Monolith, Tehachapi NE, Tehachapi North, Keene, Oiler Peak, Bena, and Edison USGS quads.		

## 2.4.6 Wildlife Movement/Migration Corridors

### Wildlife Corridor Definition

Wildlife movement/migration corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization tends to create isolated islands of wildlife habitat. Several studies have shown that in the absence of habitat linkages, which facilitate wildlife movements between adjoining open space areas, some wildlife species, especially the larger and more mobile mammals, will not likely persist over time. This is because fragmentation and/or the isolation of habitat areas can prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990). Wildlife corridors can often mitigate the effects of this fragmentation by (1) allowing animals to move between remaining habitats, thereby allowing depleted populations to be replenished; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events such as fire or disease will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983; Farhig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (defined as juvenile animals moving from natal areas and individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities such as foraging for food or water; defending territories; or searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as wildlife corridor, travel route, habitat linkage, and wildlife crossing, to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

- *Travel route* - a landscape feature such as a ridgeline, drainage, canyon, or riparian strip in a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to

necessary resources such as water, food, cover, and den sites. The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover between habitat areas; and it provides a relatively direct link between target habitat areas.

- *Wildlife corridor* - a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement in the corridor. Larger, landscape-level corridors, often referred to as habitat or landscape linkages, can provide both transitory and resident habitat for a variety of species.
- *Wildlife crossing* - a small, narrow area, relatively short in length and generally constricted, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent choke points along a movement corridor.

#### Wildlife Movement in the Study Area

It is important to note that, in a large open space area in which there are few or no manmade or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes including canyons, ridgelines, trails, riverbeds, and others, wildlife may be able to utilize these local routes while searching for food, water, shelter, and mates, rather than needing to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is in or contiguous with a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or the construction of physical obstacles such as roads and highways, remaining landscape features or travel routes that connect the larger open space areas can become corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions such as manmade noise or artificial lighting that would generally hinder wildlife movement.

This concept applies to many of the open space areas in the HST study area and in the immediate vicinity. In other words, many of the open space areas in the study area are currently large enough to support a variety of resident wildlife species and populations. These large habitat areas also occur adjacent to, or allow unrestricted access to, permanently designated open space areas in the region, including Los Padres National Forest, Angeles National Forest and Sequoia National Forest. While there are likely a number of preferred travel routes and landscape features that the larger and more mobile wildlife species use to move within and between these permanent open space areas, no apparent movement corridors, as defined above, presently exist in the open space habitat areas in the survey area and surrounding permanent open space areas at this time. This is essentially because the current open space areas between and adjacent to the permanently designated open space areas (parks and forests) have generally not been constrained or reduced to the point of creating, or necessitating, movement corridors. However, as development in this area continues and the open spaces between the national forests and other areas become constrained, any remaining habitat links between the forests and other permanent open space areas could become movement corridors.

## Linkages

A conference of experts with on-the-ground familiarity of habitat corridors was held in 2000. The results were presented in a report and some of the findings are used below to describe linkages found within the project area (California Wilderness Coalition 2000). Linkage types and names are those used during the conference. The study discusses linkages throughout California and the importance of maintaining connectivity between remaining natural areas and minimizing further fragmentation for the long-term viability of California's natural heritage.

### Linkage Types Defined

**Landscape Linkage:** Large, regional connections between core areas meant to facilitate animal movements and other essential flows between different sections of the landscape. These linkages are not necessarily constricted, but are essential to maintain connectivity function in the ecoregion (California Wilderness Coalition 2000). These may include habitat linkages, riparian corridors, etc.

**Connectivity Choke-Point:** A narrow, impacted or otherwise tenuous habitat linkage connecting two or more core areas (California Wilderness Coalition 2000). Choke-points are essential to maintain landscape-level connectivity, but are particularly in danger of losing connectivity function. An example is an underpass under a major roadway that is critical to animal movement between core areas.

**Missing Link:** A highly impacted area currently providing limited to no connectivity function (due to intervening development, roadway, etc), but based on one location that is critical to restore connectivity function (California Wilderness Coalition 2000). For example, a missing link might be a critical section of major highway that bisects two larger habitat core areas but that is currently impermeable to animal movement.

### Linkages Within the Study Area

The wildlife movement/migration corridors in the study area are shown in Figure 2.4-1. These linkages are described below.

#### **South End San Joaquin Valley Linkage (1)**

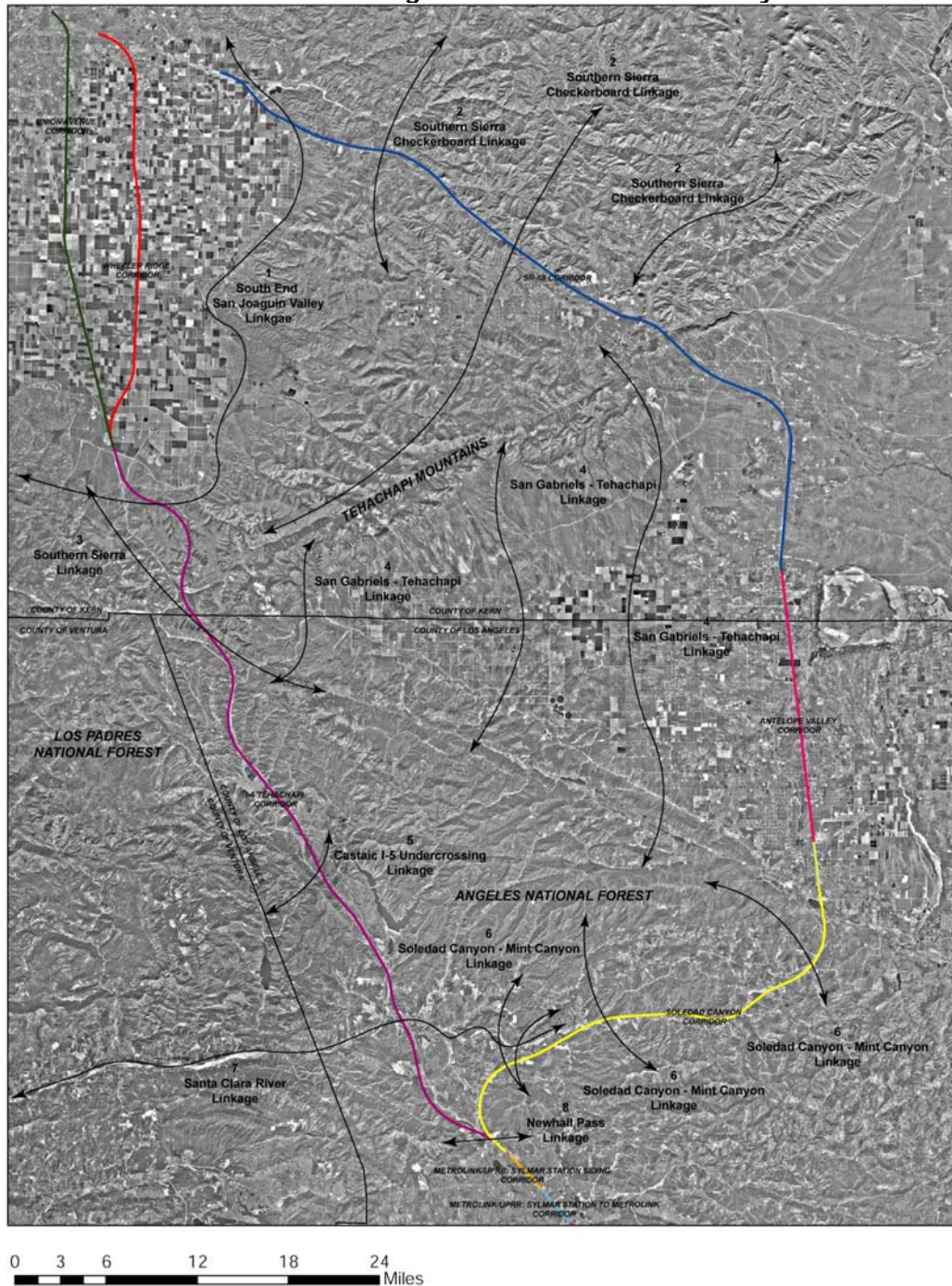
Designated as a Landscape Linkage, the South End San Joaquin Valley Linkage allows movement from the Los Padres National Forest to the Tehachapi Mountains and El Tejon Mountains and into the Sequoia National Forest. Habitats associated with this linkage are valley grassland and saltbush scrub. San Joaquin kit fox, short-nosed kangaroo rat, blunt-nosed leopard lizard, and Le Conte's thrasher are key species used in the identification of this linkage and are indicative of its connectivity. SR-58, the I-5 and gaps in vegetation cove along I-5r, as well as the steep and hilly terrain of the area pose significant impediments/barriers to animal movement within the linkage area. Bridges/underpasses and continuous habitat located along this linkage facilitate animal movement.

#### **Southern Sierra Checkerboard Linkage (2)**

The Southern Sierra Checkerboard Linkage is a Landscape Linkage allowing for movement throughout the Tehachapi mountain range and crosses SR-58. Key species used to identify the linkage are deer, bear, mountain lion, and bobcat, all of which are indicative of the linkage's connectivity. Primary habitats associated with this linkage are woodlands, chaparral, foothill and ponderosa pine forest. SR-58 and other roadways are significant impediments/barriers to animal movement within the linkage area.



**Figure 2.4-1**  
**Wildlife Movement/Migration Corridors in the Study Area**



**Wildlife Movement/Mitigation Corridors in the Study Area**

California High-Speed Train Program Biological Resources Technical Evaluation

**Figure 2.4-1**

**Southern Sierra Checkerboard Linkage (3)**

The Southern Sierra Checkerboard Linkage is a Connectivity Choke-Point that connects the Los Padres National Forest and the Angeles National Forest just south of the I-5 and SR-99 interchange. Primary habitats associated with the linkage include desert scrub, chaparral, and woodland.

**San Gabriel-Tehachapi Linkage (4)**

Designated as a Missing Link, the San Gabriel-Tehachapi Linkage connects the Angeles National Forest and the Tehachapi Mountains. The primary habitats associated with this linkage include Joshua tree/juniper woodlands, creosote bush scrub, and saltbush scrub. These habitats support this area as a general wildlife corridor. Animal movement within the linkage area has significant impediments/barriers that include private lands, agriculture, and future development in the area. Existing California Department of Parks and Recreation (CDPR) and CDFG lands are features that currently facilitate animal movement through the linkage area.

**Castaic I-5 Undercrossing Linkage (5)**

The Castaic I-5 Undercrossing Linkage is a Connectivity Choke-Point linking Los Padres National Forest with Angeles National Forest near Castaic Lake. The primary habitats associated with the linkage are alluvial fan sage scrub and riparian scrub. These habitats support all Los Padres National Forest mammals. Significant impediments/barriers to animal movement associated with the linkage area are SR-126 and I-5. Existing riparian habitat, underpasses, and bridges facilitate animal movement through the linkage area.

**Soledad Canyon-Mint Canyon Linkage (6)**

Designated as a Connectivity Choke-Point, the Soledad Canyon-Mint Canyon Linkage provides movement throughout the Angeles National Forest. Mammals, three-spine stickleback, southwestern willow flycatcher, and western spadefoot are key species used to identify the linkage. Primary habitats associated with the linkage include oak woodland, chaparral, and riparian. SR-14 is the only significant impediment to animal movement within the linkage area; however, the existing features allowing animal movement through the linkage area include the Santa Clara River, and the Angeles and Los Padres National Forests.

**Santa Clara River Linkage (7)**

The Santa Clara River Linkage is a Landscape Linkage that provides movement along the Santa Clara River from the Pacific Ocean to the Angeles National Forest. Fish and birds are the key species used to identify the linkage and are indicative of its connectivity. Primary habitat types associated with the linkage are riparian woodlands and scrub. Significant impediments/barriers to animal movement within the linkage area are gaps in vegetation cover; however, existing features facilitating animal movement through the linkage area include riparian habitat and an absence of dams.

**I-5 Newhall Pass Linkage (8)**

The I-5 Newhall Pass Linkage is a Landscape Linkage and Connectivity Choke-Point that provides movement from hills west of I-5 south of the I-5/SR-14 interchange to the Angeles National Forest. Key species used to identify the linkage and that are indicative of its connectivity include all San Gabriel Mountain mammals, mountain lions, bobcat, gray fox, deer, coyote, and black bear. Primary habitat types associated with the linkage are oak woodland and chaparral. Significant impediments/barriers to animal movement within the linkage area are SR-14 and I-5. Existing features that facilitate animal movement through the linkage area include the Los Pinetos SR-14 undercrossing (disturbed coast live



oak woodland), the Gavin Canyon I-5 crossing (disturbed coast live oak woodland), and the I-5 Weldon Canyon overpass (roadcut with buckwheat).

## 2.5 JURISDICTIONAL WATERS AND WETLANDS

The High-Speed Train Alternatives extend through a diverse region that includes several types of waters and wetlands. These waters range from concrete-lined urban streams, reservoirs and agricultural ditches, to natural rivers, desert washes, and mountain lakes. The water and/or wetland system present in each area is dependant upon a variety of factors, including substrate, groundwater levels, precipitation, topography, and man-made improvements. Three water systems are located within the project area; these are lacustrine, palustrine, and riverine. These systems and the subsystems that they incorporate are described below:

Lacustrine (L) - The lacustrine system includes wetlands and deepwater habitats, including natural or artificial lakes and reservoirs that occur within a topographic depression or a dammed river channel. Lacustrine systems lack trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30 percent areal coverage, and with a total area that exceeds 20 acres. The lacustrine system is bounded by uplands or by wetlands dominated by trees, shrubs, mosses, or lichens. Lacustrine systems within the project vicinity include Castaic Lake and Palmdale Lake.

Palustrine (P) - The palustrine system includes ponds and nontidal wetlands dominated by trees, shrubs, mosses or lichens. The palustrine system includes vegetated wetlands traditionally referred to as marshes, swamps, bogs, fens, and prairie potholes. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries, on river floodplains, or on slopes. They may also occur as islands in lakes or rivers.

Riverine (R) - The riverine system includes all rivers, streams and wetlands contained in natural or artificial channels that periodically or continuously contain flowing water or which forms a connecting link between two waterbodies. Upland islands or palustrine wetlands may occur in the channel, but they are not part of the riverine system. The riverine system is bounded on the landward side by uplands, channel banks, or by wetlands dominated by trees, shrubs, persistent emergents, mosses, or lichens. Riverine systems within the project vicinity include the Los Angeles River, the Santa Clara River, and numerous tributaries.

Riverine systems can be classified as ephemeral, intermittent, or perennial depending upon the source and continuity of flows within the channel. The USGS maps or USGS Water Resources Data (stream gauge data) are used as the primary data source in determining if the riverine channel is a perennial or intermittent stream.

**Ephemeral** – An ephemeral stream is located above the water table year-round and only contains flowing water during and for a short duration after rainfall events. The stream may not have a well-defined channel.

**Intermittent** – Intermittent channels contain flowing water only during wet periods of the year (30 to 90 percent of the time) when groundwater or rainfall provides water for stream flow. The stream generally flows in a continuous, well-defined channel. Vegetation is dependent on the length of inundation, as well as the substrate type. In many cases, streambeds are not vegetated because of the scouring effect of the moving water, but occasionally pioneering annuals or perennials may colonize the area during low flow. Many small drainage ditches are included with this type.

Perennial – A perennial stream contains flowing water year-round during a typical year, and groundwater is the primary source of water for stream flow. These streams can exist as upper perennials which are characterized by the swift moving water and high biological diversity, or lower perennials, which are slower moving and may exhibit oxygen deficits. The upper perennial streams are associated with headwaters, while lower perennials extend through level floodplains.

Lakes, rivers, streams, and other waterbodies are termed “jurisdictional waters” when they are protected by federal and/or state law. Special aquatic sites, which include wetlands, are considered an important subset of jurisdictional waters. State and federal resource agencies regulate activities that take place within or could impact jurisdictional waters and associated riparian resources. In order to identify jurisdictional features and define the jurisdictional limits, state and federal resource agencies have developed the following regulations which act as legal definitions for jurisdictional waters and wetlands:

California Department of Fish and Game: The State of California Department of Fish and Game jurisdiction includes rivers, streams, and lakes pursuant to Sections 1600-1603 of the California Fish and Game Code. Streams are defined in the California Department of Fish and Game Code (Code) as “a body of water that flows at least periodically...through a bed or channel having banks, and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.”

The CDFG defines wetlands as “lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water.” For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time of the growing season of each year. The CDFG only requires the presence of one of the above criterion to designate wetlands.

Regional Water Quality Control Board: The RWQCB is the primary agency responsible for protecting water quality in California under the Federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB defines “waters of the state” as any surface water or ground water, including saline waters, within the boundaries of the state. The RWQCB’ jurisdiction includes waters of the U.S., which are considered a subset of waters of the state.

U.S. Army Corps of Engineers: The USACE has regulatory authority over waters of the U.S. under Section 404 of the CWA. The term “waters of the U.S.” includes (1) all waters that are or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) wetlands; (3) all waters such as interstate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries of waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to the waters mentioned above.

Federal jurisdiction is dependent upon a demonstrated nexus between the subject water feature and navigable waters or interstate commerce. Previously, the USACE had routinely asserted jurisdiction over any isolated waters that could be used by migratory birds, thus establishing an interstate commerce nexus. A recent U.S. Supreme Court decision in the *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) case determined that “nonnavigable, isolated, and intrastate” waters whose sole reason for being regulated was their connection to migratory bird usage will not be regulated by the USACE. Therefore, any drainage or surface water features delineated within the project site must exhibit a connection to navigability or commerce to constitute a water of the U.S.

Federal wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The USACE methods for determining the boundaries of jurisdictional wetlands are described in the 1987 Manual (Environmental Laboratory 1987). The methods set forth in the manual are based on the following three indicators that are normally present in wetlands: (1) hydrology providing permanent or periodic inundation by groundwater or surface water, (2) hydric soils, and (3) hydrophytic vegetation. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within these three parameters.

Wetlands can be generally defined as "lands transitional between aquatic and terrestrial systems where the water table is usually at or near the surface, or the land is covered by shallow water.

### 3.0 METHODS FOR BIOLOGICAL RESOURCES ANALYSIS

#### 3.1 DATA COLLECTION

The types of sensitive vegetation communities, plant species, and wildlife species were evaluated through GIS analysis of the California Department of Fish and Game's Natural Diversity Data Base (NDDDB) (CDFG 2002). The types and approximate locations of general, non-sensitive vegetation communities were evaluated using Gap vegetation and the California Wildlife Habitat Relationships System (CDFG 2003). Field reconnaissance to verify the locations of these communities or species was not conducted.

The type and extent of jurisdictional wetlands within the high-speed train alignment and its alternatives was evaluated through GIS analysis of digital wetlands data from the National Wetland Inventory (NWI). NWI is maintained by the U.S. Fish and Wildlife Service to provide information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. NWI digital data files are records of wetlands location and classification as developed by the U.S. Fish & Wildlife Service. The classification system was adopted as a national classification standard in 1996 by the Federal Geographic Data Committee. The location of the wetlands is mapped on U.S. Geologic Survey (USGS) 7.5 minute topographic quadrangle maps with codes that provide information on the water body type and substrate.

The NWI maps do not show all wetlands since the maps are derived from aerial photointerpretation with varying limitations due to scale, photo quality, inventory techniques, and other factors. Consequently, the maps tend to show wetlands that are readily photointerpreted given consideration of photo and map scale. In general, the older NWI maps prepared from 1970s-era black and white photography (1:80,000 scale) tend to be very conservative, with many forested and drier-end emergent wetlands not mapped. Maps derived from color infrared photography tend to yield more accurate results except when this photography was captured during a dry year, making wetlands identification equally difficult. Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory.

NWI is in the process of digitizing and updating NWI maps for the United States. However, not all areas are currently available. NWI maps were not available for approximately one-half of the study area. The USGS quadrangles that were unavailable included San Fernando, Oat Mountain, Newhall, Liebre Mountain, Pastoria Creek, Mettler, Weed Patch, Lamont, Gosford, Mint Canyon, Agua Dulce, Sleepy Valley, Acton, Pacifico Mountain, Lancaster East, Soledad Mountain, Mojave, Monolith, Tehachapi NE, Tehachapi North, Keene, Oiler Peak, Bena, and Edison.

Jurisdictional non-wetland waters were evaluated through the identification of intermittent and/or ephemeral streams that occur within the vicinity of each alignment. These waters are not included in the NWI database, but are depicted on USGS topographic quadrangle maps as blue-line streams. The continued existence and location of the blue-line streams was confirmed by examining 2002 aerial photographs. To the extent possible, the identification and classification criterion established by the regulatory agencies and described in Section 2.5 was used in the evaluation to determine the type and extent of jurisdictional waters and wetlands within the alignment footprints.

Information on wildlife movement corridors was obtained from the *Missing Linkages* report prepared by the California Wilderness Coalition (2000). This document was produced as a result of a symposium held November 2, 2000, among various organizations, including the California Wilderness Coalition, the Nature Conservancy, United States Geological Survey, Ecology & Applied Conservation, and California State Parks. The goal of the symposium was "to systematically identify, study, and protect wildlife corridors" (California Wilderness Coalition 2000). Major wildlife movement corridors as described in this document

were identified within the study area. Impacts to such corridors were assessed by segment, as discussed in Section 4.0.

### 3.2 SIGNIFICANCE CRITERIA FOR BIOLOGICAL RESOURCES

The following criteria were used to determine the significance of impacts to biological resources. These thresholds are derived from state and federal legal requirements to protect special status species, their habitat, other sensitive habitats, wetlands, and other jurisdictional waters.

An alternative may have a significant impact on biological resources if its implementation would result in:

- Harm to, harassment of, or destruction of individuals of any species listed as threatened, endangered, or rare under state or federal law. In addition, impacts are considered significant to other species if:
  - the survival and reproduction of a species in the wild would be in immediate jeopardy;
  - the species exists in such small numbers throughout all or a substantial portion of its range that it may become endangered if its habitat worsens as a result of the project; or
- Modification or destruction of the habitat, movement/migration corridors, or breeding areas of endangered, threatened, rare, or other species as described above.
- Loss of a substantial number of any species that could substantially affect the abundance or diversity of that species beyond the level of normal variability.
- Impacts to or measurable degradation of legally protected habitats, or wetlands or other waters under the jurisdiction of the U.S. Army Corps of Engineers and/or California Department of Fish and Game.

### 3.3 IMPACTS ASSESSMENT

Potential impacts of the Modal and HST Alternatives on sensitive biological resources, including plant communities, plant and wildlife species and jurisdictional waters and wetlands, were determined using the following buffers:

- 305 m (1,000 ft) in developed areas (urban and rural infrastructure, excluding agriculture)
- 0.4 km (0.25 mi) in undeveloped areas (including agriculture and other undeveloped areas)
- 0.8 km (0.5 mi) in sensitive areas (lagoons, estuaries, marshes, wildlife conservation areas, or wildlife sanctuaries)

Because there were no sensitive areas in the Bakersfield-to-Los Angeles study area, only the 305 m (1,000 ft) and 0.4 km (0.25 mi) buffers were used. Field surveys and design of the construction footprint should be conducted for the Project-Level EIR/EIS to determine the actual extent of impacts to biological resources.

Determinations of impacts were made using the 2002 California Natural Diversity Data Base (CNDDB) for sensitive plant communities, plant species, and wildlife species. The National Wetlands Inventory and USGS maps were used to determine impacts to jurisdictional waters and wetlands. Impacts to jurisdictional wetlands are reported in hectares and acres, while those to jurisdictional non-wetland waters of the U.S. are reported in linear kilometers (or meters) and miles (or feet). Impacts to regional wildlife movement/migration corridors identified in the California Wilderness Coalition 2000 report were determined by noting which corridors are crossed by a segment and the planned construction type for the crossing. Impacts to marine/anadromous fish resources were determined by noting which segments cross the Santa Clara River, where these resources are located, and the planned construction type for the crossing.



Where feasible, construction type was factored into the impacts assessment. Because the segment type and construction type occurred in two separate GIS layers, it was not possible to conduct the impacts analysis on both segment and construction type. That is, we could quantify impacts of each segment or each construction type from Bakersfield-to-Los Angeles, but not both. To remedy this situation, biological resources from the CNDDDB were overlain on construction type to determine which of these resources occurred in tunnel and noting which construction segment or segments the tunnel areas corresponded to. Then, for a given segment, if all occurrences of a particular resource (sensitive plant community, for example) were only identified within tunnel areas, then impacts to this resource were assumed to be non-existent. If some occurrences of a particular resource were identified in tunnel areas and some in areas of a different construction type (cut and fill, for example), then qualifying statements were added to Section 4.0 identifying that impacts to the resource would be reduced due to tunneling where some of these resources were located. Acreages of plant communities occurring within tunnel sections for a given segment were estimated by taking the fraction of the acreage of the plant community polygon occurring within the tunnel segment. However, this was not done for jurisdictional waters and wetlands due to the nature of the database. For the purposes of this analysis, it was assumed that tunneling would not result in impacts to biological resources within tunnel sections because the tunnel will be lined and sealed as construction with a tunnel boring machine takes place, with no impacts on groundwater levels and no potential for dewatering impacts on surface resources. Some surface disturbance associated with tunnel portal construction would occur, but this disturbance would only occur for a minimal distance (approximately 100 feet, for instance) at the beginning and end of the tunnel sections. In addition to accounting for resources within tunnel sections, resources within aerial or structure sections were also noted because it is assumed that, within a given area, these construction types would have less impact on biological resources than cut and fill, fill, retained fill, or trench sections. Because exact grading limits have not been defined, no quantification of the reduction of impacts within aerial or structure sections was conducted; rather, it was simply noted in Section 4.0 that impacts to a particular resource would be reduced in areas planned for aerial or structure construction.

Impacts to biological resources are either temporary or permanent. Temporary impacts include those that occur to accommodate construction or involve underground facilities, where the project site can be restored to pre-construction conditions, and there is no permanent loss of biological functions and values. Permanent impacts occur when a site is converted to urban use through paving or construction of an aboveground structure. This distinction is important in determining avoidance and mitigation measures for each resource.

Temporary and permanent impacts to biological resources and jurisdictional waters and wetlands will be determined on a project-level basis with the use of project specific biological survey and mapping data and final as-built project plans. Impacts to biological resources and jurisdictional waters and wetlands were summarized earlier in Table 1.4-1. These impacts are described in further detail by alternative and segment in Section 4.0. A more detailed table addressing impacts to biological resources and jurisdictional waters and wetlands is provided in Section 4.4.

## 4.0 IMPACTS TO BIOLOGICAL RESOURCES AND JURISDICTIONAL WATERS

### 4.1 NO-PROJECT ALTERNATIVE

#### 4.1.1 Impacts to Biological Resources from I-5: SR-99 to SR-14

##### A. SENSITIVE VEGETATION

Because there are no programmed improvements to I-5 between SR-99 and SR-14, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

##### B. SENSITIVE WILDLIFE

Because there are no programmed improvements to I-5 between SR-99 and SR-14, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

##### C. JURISDICTIONAL WATERS

Because there are no programmed improvements to I-5 between SR-99 and SR-14, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

#### 4.1.2 Impacts to Biological Resources from I-5: SR-14 to I-405

##### A. SENSITIVE VEGETATION

Because there are no programmed improvements to I-5 between SR-14 and I-405, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

##### B. SENSITIVE WILDLIFE

Because there are no programmed improvements to I-5 between SR-14 and I-405, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

##### C. JURISDICTIONAL WATERS

Because there are no programmed improvements to I-5 between SR-14 and I-405, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

#### 4.1.3 Impacts to Biological Resources from I-5: I-405 to Burbank

##### A. SENSITIVE VEGETATION

Because there are no programmed improvements to I-5 between I-405 and Burbank, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

##### B. SENSITIVE WILDLIFE

Because there are no programmed improvements to I-5 between I-405 and Burbank, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

#### C. JURISDICTIONAL WATERS

Because there are no programmed improvements to I-5 between I-405 and Burbank, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

### 4.1.4 Impacts to Biological Resources from I-5: Burbank to LA Union Station

#### A. SENSITIVE VEGETATION

Because there are no programmed improvements to I-5 from Burbank to LA Union Station, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

#### B. SENSITIVE WILDLIFE

Because there are no programmed improvements to I-5 from Burbank to LA Union Station, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

#### C. JURISDICTIONAL WATERS

Because there are no programmed improvements to I-5 from Burbank to LA Union Station, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

### 4.1.5 Impacts to Biological Resources from SR-58/14: SR-99 to Palmdale

#### A. SENSITIVE VEGETATION

Although there is programmed widening of SR-14 in the Antelope Valley, such widening would occur within the existing right-of-way. Therefore, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

#### B. SENSITIVE WILDLIFE

Although there is programmed widening of SR-14 in the Antelope Valley, such widening would occur within the existing right-of-way. Therefore, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

#### C. JURISDICTIONAL WATERS

Although there is programmed widening of SR-14 in the Antelope Valley, such widening would occur within the existing right-of-way. Therefore, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

### 4.1.6 Impacts to Biological Resources from SR-14: Palmdale to I-5

#### A. SENSITIVE VEGETATION

Because there are no programmed improvements to SR-14 from Palmdale to I-5, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

#### B. SENSITIVE WILDLIFE

Because there are no programmed improvements to SR-14 from Palmdale to I-5, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

#### C. JURISDICTIONAL WATERS

Because there are no programmed improvements to SR-14 from Palmdale to I-5, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

### 4.1.7 Impacts to Biological Resources from Airport Expansion

#### A. SENSITIVE VEGETATION

Because there are no programmed improvements to Burbank Airport, this portion of the No-Project Alternative would not impact any sensitive plant species or plant communities.

#### B. SENSITIVE WILDLIFE

Because there are no programmed improvements to Burbank Airport, this portion of the No-Project Alternative would not impact any sensitive wildlife species or their habitat, wildlife movement/migration corridors or marine/anadromous fish resources.

#### C. JURISDICTIONAL WATERS

Because there are no programmed improvements to Burbank Airport, this portion of the No-Project Alternative would not impact any jurisdictional waters or wetlands.

## 4.2 MODAL ALTERNATIVE

### 4.2.1 Potential Impacts to Biological Resources from Highway Expansion

#### A. I-5: SR-99 to SR-14

Under this alternative, I-5 would be widened by two lanes from SR-99 to SR-14. This widening may result in impacts to the following sensitive vegetation communities:

- California walnut woodland
- Riversidean alluvial fan sage scrub
- Southern cottonwood-willow riparian forest
- Southern willow scrub
- Valley needlegrass grassland
- Valley oak woodland, and
- Wildflower field

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate plant species:

- Slender-horned spineflower
- San Fernando Valley spineflower

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to the following plant species of special concern:

- Slender mariposa lily

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Santa Ana sucker
- Arroyo toad
- San Joaquin kit fox
- Tehachapi slender salamander
- Unarmored threespine stickleback
- San Joaquin antelope squirrel, and
- California condor

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to the following wildlife species of special concern:

- Tehachapi pocket mouse
- San Diego desert woodrat
- San Diego horned lizard, and
- San Joaquin pocket mouse

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to marine/anadromous fish resources due to potential impacts to the Santa Clara River.

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to three regional wildlife movement/migration corridors. These corridors would include:

- South End San Joaquin Valley Linkage  
This part of the Modal Alternative could limit movement from two major areas providing natural habitat to key species such as the San Joaquin kit fox, blunt-nosed leopard lizard and Le Conte's thrasher. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpasses that are of sufficient size to facilitate wildlife movement.
- Southern Sierra Checkerboard Linkage  
This part of the Modal Alternative could limit movement from the Los Padres National Forest to both the Angeles National Forest and the Tehachapi Mountain range. Short-term, temporary impacts to wildlife movement during construction are anticipated, though impacts from tunneling should be negligible. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpasses that are of sufficient size to facilitate wildlife movement.
- Castaic I-5 Undercrossing Linkage  
This part of the Modal Alternative could limit movement of Los Padres National Forest mammals, though it is anticipated that impacts on wildlife movement due to tunneling would be negligible provided surface construction activities are minor.

The I-5: SR-99 to SR-14 segment of the Modal Alternative is expected to impact 53.5 ha (132.1 ac) of lacustrine waters, 108.2 ha (267.5 ac) of palustrine waters, and 8.8 ha (21.7 ac) of riverine waters. All of these waters are expected to consist of or include wetlands and would be considered state and federally jurisdictional. The I-5: SR-99 to SR-14 segment is also expected to impact 27.5



km (17.1 mi) of non-wetland intermittent streambed and 4.5 km (2.8 mi) of non-wetland perennial streambed associated with Canada De Los Alamos Creek, Castaic Creek, Gorman Creek, Piru Creek, and the Santa Clara River. Impacts to jurisdictional waters and wetlands are shown below in Table 4.2-1.

**Table 4.2-1  
Summary of Jurisdictional Waters in the I-5: SR-99 to SR-14 Segment of the  
Modal Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Black Mountain	E: 619422 N: 9119338	Wetland Water of the U.S. Water of the State	Lacustrine	--	3.000 ha, 7.413 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	0.057 ha, 0.141 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	0.022 ha, 0.054 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	36.331 ha, 89.776 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	2.740 ha, 6.770 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	6.382 ha, 15.770 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	0.109 ha, 0.270 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	2.827 ha, 6.986 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	1.987 ha, 4.910 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.090 ha, 0.222 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.304 ha, 0.751 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.663 ha, 4.109 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.681 ha, 1.682 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.716 ha, 1.786 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.691 ha, 1.707 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	3.010 ha, 7.437 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.443 ha, 1.094 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	2.026 ha, 5.007 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	4.929 ha, 12.181 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.007 ha, 0.017 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	3.824 ha, 9.450 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.302 ha, 0.747 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.859 ha, 2.124 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.472 ha, 1.167 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.190 ha, 2.940 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.984 ha, 2.430 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.828 ha, 0.740 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.156 ha, 0.386 ac
Black Mountain	E: 619422 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	1.393 ha, 3.441 ac
Black Mountain	E: 619422 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	1.156 ha, 2.858 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	26.642 ha, 65.833 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	11.623 ha, 28.721 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.447 ha, 1.105 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.466 ha, 1.151 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.466 ha, 1.152 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.009 ha, 0.021 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.662 ha, 1.636 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.876 ha, 2.163 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	1.032 ha, 2.549 ac
Whitaker Peak	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.075 ha, 0.185 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.894 ha, 2.208 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.573 ha, 3.887 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	2.572 ha, 6.356 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.439 ha, 1.086 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.122 ha, 0.302 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.078 ha, 0.192 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.669 ha, 1.654 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.327 ha, 0.808 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.601 ha, 3.955 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.778 ha, 1.923 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	6.227 ha, 15.388 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.961 ha, 2.375 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.243 ha, 3.071 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.185 ha, 0.457 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	1.854 ha, 4.580 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.501 ha, 1.237 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.053 ha, 0.130 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.088 ha, 0.218 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.255 ha, 0.630 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.393 ha, 0.972 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.769 ha, 1.899 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	4.386 ha, 10.837 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.028 ha, 0.070 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.046 ha, 0.113 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.009 ha, 0.021 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.912 ha, 4.725 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	1.450 ha, 3.584 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.431 ha, 1.064 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.121 ha, 0.299 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.052 ha, 2.601 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.550 ha, 1.359 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.149 ha, 0.368 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.163 ha, 0.402 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.765 ha, 1.890 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.115 ha, 0.285 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.151 ha, 0.372 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.268 ha, 0.662 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.544 ha, 1.344 ac
Whitaker Peak	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	1.151 ha, 2.845 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	1.712 ha, 4.230 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.077 ha, 0.190 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	3.283 ha, 8.113 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.370 ha, 0.913 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Riverine	--	3.281 ha, 8.107 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Riverine	--	0.570 ha, 1.407 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Riverine	--	0.954 ha, 2.357 ac
Frazier Mountain	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Riverine	--	3.967 ha, 9.802 ac
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	4.0 m, 12.1 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	50.0 m, 178 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	190 m, 613 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	280 m, 911 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	940 m, 3,091 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	40.0 m, 147 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	30.0 m, 182 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	130 m, 427 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	220 m, 742 ft	--



USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	360 m, 1,176 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	400 m, 1,336 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	440 m, 1,447 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	510 m, 1,686 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	1,310 m, 4,316 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	7.0 m, 22.63 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	50.0 m, 153 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	60.0 m, 198 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	290 m, 962 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	520 m, 1,715 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	620 m, 2,048 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	1,070 m, 3,509 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,180 m, 3,860 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,730 m, 5,669 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	1,880 m, 6,165 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	2,590 m, 8,491 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	3,920 m, 12,863 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	37.0 m, 120 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	190 m, 638 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,290 m, 4,217 ft	--

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	2,120 m, 6,940 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	2,370 m, 7,785 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	2,690 m, 8,830 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Perennial	1,080 m, 3,552 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	30 m, 101 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	30 m, 101 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	610 m, 1,992 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	710 m, 2,318 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	800 m, 2,616 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	1,220 m, 4,012 ft	--

#### B. I-5: SR-14 to I-405

Under this alternative, four double-decked lanes would be added to I-5 from SR-14 to I-405. This widening would not result in any impacts to sensitive vegetation communities.

The I-5: SR-14 to I-405 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate plant species:

- San Fernando Valley spineflower

The I-5: SR-14 to I-405 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Least Bell's vireo

The I-5: SR-14 to I-405 segment of the Modal Alternative would not result in impacts to any known plant or wildlife species of special concern.

The I-5: SR-14 to I-405 segment of the Modal Alternative would not result in impacts to marine/anadromous fish resources.

The I-5: SR-14 to I-405 segment of the Modal Alternative may result in impacts to the following regional wildlife movement/migration corridor:

- I-5 Newhall Pass Linkage

This part of the Modal Alternative could impact movement from the hills west of the I-5 south of the I-5/SR-14 interchange to the Angeles National Forest by the larger mammals that utilize this linkage. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.

The I-5: SR-14 to I-405 segment of the Modal Alternative is not anticipated to impact any jurisdictional waters or wetlands.

C. I-5: I-405 to Burbank

Under this alternative, I-5 would be widened by four lanes from I-405 to Burbank. This widening would not result in any impacts to sensitive vegetation communities.

The I-5: I-405 to Burbank segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate plant species:

- San Fernando Valley spineflower

The I-5: SR-99 to SR-14 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Coastal California gnatcatcher

The I-5: I-405 to Burbank segment of the Modal Alternative would not result in impacts to any known plant or wildlife species of special concern.

The I-5: I-405 to Burbank segment of the Modal Alternative is not anticipated to impact any wildlife movement/migration corridors or marine/anadromous fish resources.

The I-5: I-405 to Burbank segment of the Modal Alternative is expected to impact 1.0 ha (2.5 ac) of lacustrine waters and 5.5 ha (13.6 ac) of riverine waters. All of these waters are expected to consist of or include wetlands and would be considered state and federally jurisdictional. The I-5: I-405 to Burbank segment is also expected to impact 6.4 km (4.0 mi) of non-wetland intermittent streambed and 0.8 km (0.5 mi) of non-wetland perennial streambed. Impacts to jurisdictional waters and wetlands are shown below in Table 4.2-2.

**Table 4.2-2**  
**Summary of Jurisdictional Waters in the I-5: I-405 to Burbank Segment**  
**of the Modal Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Lacustrine	--	0.631 ha, 1.560 ac
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Lacustrine	--	0.394 ha, 0.975 ac
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Riverine	--	5.484 ha, 13.552 ac
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Intermittent	2,440 m, 7,994 ft	--
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	500 m, 1,633 ft	--
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	2,100 m, 6,891 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	800 m, 2,659 ft	--
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	110 m, 368 ft	--
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	140 m, 452 ft	--
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	470 m, 1,545 ft	--
Van Nuys	E: 612549 N: 3993979	Non-wetland Water of the US Water of the State	Intermittent	600 m, 2,120 ft	--

**D. I-5: Burbank to LA Union Station**

Under this alternative, I-5 would be widened by four lanes from Burbank to LA Union Station. This widening may result in impacts to the following sensitive vegetation community:

- California walnut woodland

The I-5: Burbank to LA Union Station segment of the Modal Alternative would not impact any state or federally listed or candidate plant or wildlife species.

The I-5: Burbank to LA Union Station segment of the Modal Alternative would not impact any plant or wildlife species of special concern.

The I-5: Burbank to LA Union Station segment of the Modal Alternative is not anticipated to impact any wildlife movement/migration corridors or marine/anadromous fish resources.

The I-5: Burbank to LA Union Station segment of the Modal Alternative is expected to impact 41.0 ha (101.3 ac) of perennial streambed associated with the Los Angeles River. These waters are expected

to consist of or include wetlands and would be considered state and federally jurisdictional. The I-5: Burbank to LA Union Station segment is also expected to impact 1.1 km (0.7 mi) of non-wetland intermittent streambed associated with Verdugo Wash and Arroyo Seco, and 6.8 km (4.6 mi) of non-wetland perennial streambed associated with the Los Angeles River. Impacts to jurisdictional waters and wetlands are shown below in Table 4.2-3.

**Table 4.2-3**  
**Summary of Jurisdictional Waters in the I-5: Burbank to LA Union Station**  
**of the Modal Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Hollywood	E: 423039 N: 3762527	Wetland Water of the US Water of the State	Riverine	--	16.173 ha, 39.965 ac
Hollywood	E: 423039 N: 3762527	Wetland Water of the US Water of the State	Riverine	--	1.336 ha, 3.302 ac
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Riverine	--	23.495 ha, 58.058 ac
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Intermittent	700 m, 2,145 ft	--
Hollywood	E: 423039 N: 3762527	Non-wetland Water of the US Water of the State	Perennial	4 m, 12.53 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	550 m, 1,792 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	800 m, 2,637 ft	--
Hollywood	E: 423039 N: 3762527	Non-wetland Water of the US Water of the State	Perennial	2,700 m, 8,840 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	2,700 m, 8,896 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Intermittent	440 m, 1,448 ft	--

E. SR-58/14: SR-99 to Palmdale

Under the Modal Alternative no programmed improvements on SR-58/14 from SR-99 to Palmdale. Because there are no programmed improvements to SR-58/14 from SR-99 to Palmdale, this portion of the Modal Alternative would not impact any state and/or federally listed or candidate plant or wildlife species of special concern, marine/anadromous fish resources, wildlife movement/migration corridors, or jurisdictional waters or wetlands.

F. SR-14: Palmdale to I-5

Under this alternative, SR-14 would be widened by two lanes from Palmdale to I-5. This widening may result in impacts to the following sensitive vegetation communities:

- Riversidean alluvial fan sage scrub, and
- Southern riparian scrub



The SR-14: Palmdale to I-5 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate plant species:

- Slender-horned spineflower

The SR-14: Palmdale to I-5 segment of the Modal Alternative may result in impacts to the following plant species of special concern:

- Slender mariposa lily

The SR-14: Palmdale to I-5 segment of the Modal Alternative may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Mohave ground squirrel

The SR-14: Palmdale to I-5 segment of the Modal Alternative may result in impacts to the following wildlife species of special concern:

- Le Conte's thrasher, and
- Western spadefoot

The SR-14: Palmdale to I-5 segment of the Modal Alternative may result in impacts to marine/anadromous fish resources due to potential impacts to the Santa Clara River.

The SR-14: Palmdale to I-5 segment of the Modal Alternative may result in impacts to the following regional wildlife movement/migration corridor:

- Soledad Canyon-Mint Canyon Linkage

This part of the Modal Alternative could impact movement throughout the Angeles National Forest and the following key species that utilize this area: three-spine stickleback, southwestern willow flycatcher, western spadefoot, and mammals. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.

The SR-14: Palmdale to I-5 segment of the Modal Alternative is expected to impact 0.047 ha (0.1 ac) of lacustrine waters and 2.6 ha (6.5 ac) of riverine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The SR-14: Palmdale to I-5 segment is also expected to impact 1.6 km (1.0 mi) of non-wetland intermittent streambed and 3.2 km (2.0 mi) of non-wetland perennial streambed. Impacts to jurisdictional waters and wetlands are shown below in Table 4.2-4.

**Table 4.2-4**  
**Summary of Jurisdictional Waters in the SR-14: Palmdale to I-5 of the**  
**Modal Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Ritter Ridge	E: 259693 N: 4690991	Wetland Water of the US Water of the State	Lacustrine	--	0.041 ha, 0.100 ac
Ritter Ridge	E: 259693 N: 4690991	Wetland Water of the US Water of the State	Lacustrine	--	0.006 ha, 0.014 ac
Ritter Ridge	E: 259693 N: 4690991	Wetland Water of the US Water of the State	Palustrine	--	0.349 ha, 0.863 ac
Ritter Ridge	E: 259693 N: 4690991	Wetland Water of the US Water of the State	Riverine	--	2.629 ha, 6.497 ac
Agua Dulce	E: 429123 N: 4455915	Non-wetland Water of the US Water of the State	Intermittent	190 m, 621 ft	--
Agua Dulce	E: 429123 N: 4455915	Non-wetland Water of the US Water of the State	Intermittent	650 m, 2,136 ft	--
Ritter Ridge	E: 259693 N: 4690991	Wetland Water of the US Water of the State	Intermittent	1,220 m, 4,002 ft	--
Mint Canyon	E: 606316 N: 4456331	Non-wetland Water of the US Water of the State	Intermittent	500 m, 1,697 ft	--
Mint Canyon	E: 606316 N: 4456331	Non-wetland Water of the US Water of the State	Intermittent	590 m, 1,943 ft	--

#### 4.2.2 Potential Impacts to Biological Resources from Airport Expansion

Under this alternative, programmed improvements to Burbank airport would include 9.9 additional mean annual passengers (MAP), 19 new gates, one new runway, and one new access. These improvements would not impact any sensitive plant communities or species, sensitive wildlife species or their habitat, wildlife movement/migration corridors jurisdictional waters or wetlands, or marine/anadromous fish resources.

#### 4.2.3 Summary of Impacts from the Modal Alternative

Implementation of the Modal Alternative may result in impacts to approximately 1,122 ha (2,773 ac) of eight sensitive vegetation communities (California walnut woodland, Riversidean alluvial fan sage scrub, southern cottonwood-willow riparian forest, southern willow scrub, valley needlegrass grassland, valley oak woodland, southern riparian scrub, and wildflower field), two state and/or federally listed or candidate plant species (slender-horned spineflower and San Fernando Valley spineflower), one plant species of special concern (slender mariposa lily), 10 state and/or federally listed or candidate wildlife species (Santa Ana sucker, arroyo toad, San Joaquin kit fox, Tehachapi slender salamander, unarmored threespine stickleback, San Joaquin antelope squirrel, least Bell's vireo, coastal California gnatcatcher, Mohave ground squirrel, and California condor), six wildlife species of special concern (Tehachapi pocket mouse, San Diego desert woodrat, San Diego horned lizard, Le Conte's thrasher, western spadefoot, and

San Joaquin pocket mouse), five wildlife movement/migration corridors (South End San Joaquin Valley Linkage, Southern Sierra Checkerboard Linkage, Castaic I-5 Undercrossing Linkage, Soledad Canyon-Mint Canyon Linkage, and I-5 Newhall Pass Linkage), 51.9 km (32.7 mi) of non-wetland waters, 220.6 ha (545.3 ac) of jurisdictional wetlands, and marine/anadromous fish resources at the Santa Clara River. The majority of these impacts would occur due to the widening of I-5 from SR-99 to SR-14, followed by the widening of SR-14 from Palmdale to I-5.

It is anticipated that impacts to sensitive biological resources from the Modal Alternative would occur primarily as direct and indirect impacts during construction. In mountain crossing areas, such as along I-5 from SR-99 to SR-14 and along SR-14 from Palmdale to I-5, impacts to biological resources may be substantial due to the extensive grading that would be required for highway widening in the already confined existing rights-of-way found in these areas of rough terrain. Operational impacts are expected to be minor in comparison to construction impacts and would likely consist of indirect impacts, such as impacts associated with dust, noise, the introduction and spread of non-native, invasive plants and wildlife, stormwater runoff, siltation, and erosion. With the exception of mountain crossings, indirect impacts are not expected to be substantial because they would only incrementally increase impacts to communities and wildlife species that have already been subject to these types of impacts living adjacent to the existing roadway.

## 4.3 HIGH-SPEED TRAIN ALTERNATIVE

### 4.3.1 Impacts to Biological Resources from the Wheeler Ridge Corridor

#### A. SENSITIVE VEGETATION

The Wheeler Ridge Corridor may result in impacts to the following sensitive vegetation community:

- Valley saltbush scrub

The Wheeler Ridge Corridor would not impact any state or federally listed or candidate plant species, or plant species of special concern.

#### B. SENSITIVE WILDLIFE

The following state or federally listed or candidate wildlife species may be impacted by construction of this corridor:

- San Joaquin kit fox, and
- Tipton kangaroo rat

Impacts to some populations of San Joaquin kit fox will be minimized in areas where an aerial construction type is planned. However, impacts to populations will not be completely avoided in these areas or in areas of fill or cut and fill.

The Wheeler Ridge Corridor would not impact any wildlife species of special concern.

No marine/anadromous fish resources would be impacted by this portion of the HST corridor.

No regional wildlife movement/migration corridors are located within the Wheeler Ridge Corridor, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals.

### C. JURISDICTIONAL WATERS

The Wheeler Ridge Corridor is expected to impact 1.2 ha (2.9 ac) of palustrine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The Wheeler Ridge Corridor is not anticipated to impact any non-wetland waters. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-1.

**Table 4.3-1  
Summary of Jurisdictional Waters in the Wheeler Ridge Corridor of the  
High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.277 ha, 0.685 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.544 ha, 1.344 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.370 ha, 0.913 ac

### 4.3.2 Impacts to Biological Resources from the Union Avenue Corridor

#### A. SENSITIVE VEGETATION

The Union Avenue Corridor would not result in impacts to any sensitive vegetation communities.

The following state or federally listed or candidate plant species may be impacted by construction of this corridor:

- Bakersfield smallscale, and
- Bakersfield cactus

The Union Avenue Corridor would not impact any plant species of special concern.

#### B. SENSITIVE WILDLIFE

The following state or federally listed or candidate wildlife species may be impacted by construction of this corridor:

- San Joaquin kit fox

The Union Avenue Corridor would not result in impacts to any wildlife species of special concern.

No marine/anadromous fish resources would be impacted by this portion of the HST corridor.

No regional wildlife movement/migration corridors are located within the Union Avenue Corridor, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals.

### C. JURISDICTIONAL WATERS

Union Avenue Corridor is expected to impact 0.6 ha (1.4 ac) of palustrine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The Union Avenue Corridor is not anticipated to impact any non-wetland waters. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-2.

**Table 4.3-2  
Summary of Jurisdictional Waters in the Union Avenue Corridor of the  
High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Conner	E: 677776 N: 4106055	Wetland Water of the US Water of the State	Palustrine	--	0.068 ha, 0.167 ac
Conner	E: 677776 N: 4106055	Wetland Water of the US Water of the State	Palustrine	--	0.493 ha, 1.218 ac

### 4.3.3 Impacts to Biological Resources from the I-5: Tehachapi Corridor

#### A. SENSITIVE VEGETATION

The I-5 Tehachapi Corridor may result in impacts to the following sensitive vegetation communities:

- California walnut woodland
- Riversidean alluvial fan sage scrub
- Southern coast live oak riparian forest
- Southern cottonwood-willow riparian forest
- Southern willow scrub
- Valley needlegrass grassland, and
- Wildflower field

Impacts to 111.7 ha (276.0 ac) of California walnut woodland, 44.4 ha (109.8 ac) of southern coast live oak riparian forest, 53.7 ha (132.8 ac) of southern cottonwood-willow riparian forest, and 308.7 ha (762.8 ac) of wildflower field will be avoided in areas planned for tunneling.

The I-5: Tehachapi Corridor may result in impacts to the following state and/or federally listed or candidate plant species:

- Slender-horned spineflower, and
- San Fernando Valley spineflower

Impacts to some populations of slender-horned spineflower will be avoided in areas planned for tunneling, but not in cut and fill or structure areas.

The I-5: Tehachapi Corridor may result in impacts to the following plant species of special concern:

- Davidson's bush mallow



## B. SENSITIVE WILDLIFE

The I-5: Tehachapi Corridor may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Santa Ana sucker
- San Joaquin antelope squirrel
- Unarmored threespine stickleback
- California condor, and
- San Joaquin kit fox

The I-5: Tehachapi Corridor may result in impacts to the following wildlife species of special concern:

- Tehachapi pocket mouse
- San Diego horned lizard, and
- San Joaquin pocket mouse

Impacts to some populations of Tehachapi pocket mouse will be avoided in areas planned for tunneling, but not in cut and fill areas.

The I-5: Tehachapi Corridor may result in impacts to marine/anadromous fish resources due to potential impacts to the Santa Clara River. However, impacts are anticipated to be minimal due to plans to construct an elevated structure across the river.

The I-5: Tehachapi Corridor would impact four regional wildlife movement/migration corridors. These movement corridors include:

- **South End San Joaquin Valley Linkage**  
This linkage would be impacted by 5.01 km (3.11 mi) of fill. This portion of the HST system could limit movement from two major areas providing natural habitat to key species such as the San Joaquin kit fox, blunt-nosed leopard lizard and Le Conte's thrasher. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpasses that are of sufficient size to facilitate wildlife movement.
- **Southern Sierra Checkerboard Linkage**  
This linkage would be impacted by 2.20 km (1.37 mi) of cut and fill. Approximately 2.80 km (1.74 mi) of the I-5: Tehachapi Corridor where it intersects this linkage would be in tunnel, so impacts would be avoided in these areas. This portion of the HST system could limit movement from the Los Padres National Forest to both the Angeles National Forest and the Tehachapi Mountain range. Short-term, temporary impacts to wildlife movement during construction in cut and fill areas are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpasses that are of sufficient size to facilitate wildlife movement.
- **Santa Clara River Linkage**  
This linkage would be impacted by 4.60 km (2.86 mi) of structure. This portion of the HST system could impact movement within the Santa Clara River which supports movement of fish and bird species from the Pacific Ocean to the Angeles National Forest. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.

- **I-5 Newhall Pass Linkage**  
This linkage would be impacted by 2.16 km (1.34 mi) of structure. This portion of the HST system could impact movement from the hills west of the I-5 south of the I-5/SR-14 interchange to the Angeles National Forest by the larger mammals that utilize this linkage. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.
- **Castaic I-5 Undercrossing Linkage**  
Although the I-5: Tehachapi Corridor would intercept this linkage, it would do so with 5.50 km (3.42 mi) of tunnel. Because the only surface construction would be at portals at the beginning and end of the tunnel, it is anticipated that impacts on wildlife movement associated with this linkage would be avoided.

In addition to impacts on regional wildlife movement corridors, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals.

### C. JURISDICTIONAL WATERS

The I-5: Tehachapi Corridor is expected to impact 38.5 ha (95.0 ac) of lacustrine waters, 4.4 ha (10.8 ac) of riverine waters, and 53.5 ha (132.1 ac) of palustrine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The corridor is also expected to impact 25.9 km (16.1 mi) of non-wetland intermittent streambed and 3.3 km (2.1 mi) of non-wetland perennial streambed associated with Castaic Creek, Gorman Creek, Piru Creek, and the Santa Clara River. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-3.

**Table 4.3-3**  
**Summary of Jurisdictional Waters from the I-5: Tehachapi Corridor of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Lacustrine	--	0.313 ha, 0.773 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	0.441 ha, 1.089 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	1.571 ha, 3.882 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	2.373 ha, 5.863 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	4.648 ha, 11.486 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	13.752 ha, 33.983 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Lacustrine	--	15.355 ha, 37.942 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.104 ha, 0.747 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.147 ha, 1.167 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.350 ha, 2.124 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.392 ha, 2.858 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	0.801 ha, 3.441 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	2.393 ha, 5.407 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	1.359 ha, 14.346 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.070 ha, 0.257 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.118 ha, 0.968 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.238 ha, 0.645 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.302 ha, 0.662 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.377 ha, 0.989 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.472 ha, 0.362 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.859 ha, 0.866 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.062 ha, 1.979 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.156 ha, 5.914 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.329 ha, 35.449 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.174 ha, 1.393 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.291 ha, 6.356 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.075 ha, 0.588 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.209 ha, 0.931 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.154 ha, 0.721 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.744 ha, 3.283 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.601 ha, 15.705 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.050 ha, 0.516 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.274 ha, 1.782 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.454 ha, 1.838 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.848 ha, 3.955 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.039 ha, 0.123 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.677 ha, 7.561 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	1.121 ha, 2.188 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.550 ha, 2.095 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.096 ha, 0.261 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.268 ha, 18.685 ac
Whitaker Peak	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.185 ha, 0.400 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.568 ha, 1.404 ac
Whitaker Peak	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	0.218 ha, 0.540 ac
Whitaker Peak	E: 451940 N: 4687035	Wetland Water of the US Water of the State	Palustrine	--	1.151 ha, 2.845 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Palustrine	--	1.341 ha, 3.313 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Palustrine	--	0.245 ha, 0.606 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.457 ha, 1.130 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	0.694 ha, 1.714 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Palustrine	--	1.268 ha, 3.134 ac
Grapevine	E: 321767 N: 5384064	Wetland Water of the US Water of the State	Riverine	--	3.380 ha, 8.351 ac
Lebec	E: 615103 N: 5150795	Wetland Water of the US Water of the State	Riverine	--	0.405 ha, 1.000 ac
Black Mountain	E: 619422 N: 4919338	Wetland Water of the US Water of the State	Riverine	--	0.570 ha, 1.407 ac
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	54 m, 178 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	278 m, 911 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	395 m, 1,297 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	942 m, 3,091 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,214 m, 3,983 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	240 m, 788 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	269 m, 881 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	523 m, 1,717 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	614 m, 2,014 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	1,245 m, 4,084 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Intermittent	2,542 m, 8,337 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	46.6 m, 153 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	60.4 m, 198 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	76.3 m, 250 ft	--



USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	76.6 m, 251 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	89.3 m, 293 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	1,069 m, 3,509 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,177 m, 3,860 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,796 m, 5,892 ft	--
Lebec	E: 615103 N: 5150795	Non-wetland Water of the US Water of the State	Intermittent	1,879 m, 6,167 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	2,588 m, 8,490 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	15.6 m, 51.1 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	77.1 m, 253 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	358 m, 1,176 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	371 m, 1,218 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	759 m, 2,489 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	1,852 m, 6,077 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	2,053 m, 6,737 ft	--
Black Mountain	E: 619422 N: 4919338	Non-wetland Water of the US Water of the State	Intermittent	3,185 m, 10,449 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Perennial	22.7 m, 74.5 ft	--
Newhall	E: 273182 N: 4458994	Non-wetland Water of the US Water of the State	Perennial	1,721 m, 5,644 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	394 m, 1,293 ft	--
Oat Mountain	E: 266374 N: 4227739	Non-wetland Water of the US Water of the State	Perennial	1,165 m, 3,823 ft	--

#### 4.3.4 Impacts to Biological Resources from the SR-58 Corridor

##### A. SENSITIVE VEGETATION

The SR-58 Corridor may result in impacts to the following sensitive vegetation community:

- Stabilized interior dunes

The SR-58 Corridor may result in impacts to the following state and/or federally listed or candidate plant species:

- Bakersfield cactus
- California jewel-flower, and
- San Joaquin woollythreads

The SR-58 Corridor may result in impacts to the following plant species of special concern:

- Calico monkeyflower, and
- Comanche point layia

Impacts to some populations of calico monkeyflower will be avoided in areas planned for tunneling, but not in cut and fill areas.

##### B. SENSITIVE WILDLIFE

The SR-58 Corridor may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Swainson's hawk
- San Joaquin kit fox, and
- Tehachapi slender salamander

Impacts to habitat for Swainson's hawk will be avoided in areas planned for tunneling, but not in cut and fill areas.

The SR-58 Corridor may result in impacts to the following wildlife species of special concern known to occur within 0.8 km (0.5 mi) of this corridor:

- Tehachapi pocket mouse, and
- Le Conte's thrasher

Impacts to some populations of Tehachapi pocket mouse will be avoided in areas planned for tunneling, but not in cut and fill areas.

No marine/anadromous fish resources would be impacted by this portion of the HST corridor.

The SR-58 Corridor would impact two regional wildlife movement/migration corridors. These movement corridors include:

- South End San Joaquin Valley Linkage

This linkage would be impacted by 1.50 km (0.93 mi) of cut and fill. This portion of the HST system could potentially limit movement from two major areas providing natural habitat to key species such as the San Joaquin kit fox, blunt-nosed leopard lizard and Le Conte's thrasher. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpasses that are of sufficient size to facilitate wildlife movement.

- Southern Sierra Checkerboard Linkage

This linkage would be impacted by 8.69 km (5.40 mi) of cut and fill. Approximately 0.19 km (0.12 mi) of the SR-58 Corridor where it intersects this linkage would be in tunnel, so impacts would be avoided in these areas. This portion of the HST system could potentially limit movement from the Los Padres National Forest to both the Angeles National Forest and the Tehachapi Mountain range. Short-term, temporary impacts to wildlife movement during construction in cut and fill areas are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpasses that are of sufficient size to facilitate wildlife movement.

In addition to impacts on regional wildlife movement corridors, fencing of the right-of-way along the SR-58 Corridor may limit local wildlife movement, most notably of large mammals.

### C. JURISDICTIONAL WATERS

The SR-58 Corridor is expected to impact 16.9 km (10.5 mi) of non-wetland intermittent streambed associated with Cache Creek, Caliente Creek, Clear Creek, Tehachapi Creek, Tweedy Creek, and Walker Basin Creek. The SR-58 Corridor is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-4.

**Table 4.3-4**  
**Summary of Jurisdictional Waters from the SR-58 Corridor of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Monolith	E: 423953 N: 3873421	Non-Wetland Water of the US Water of the State	Intermittent	445 m, 1,459 ft	--
Monolith	E: 423953 N: 3873421	Non-Wetland Water of the US Water of the State	Intermittent	1,744 m, 5,724 ft	--
Edison	E: 629591 N: 4336417	Non-Wetland Water of the US Water of the State	Intermittent	535 m, 1,755 ft	--
Oiler Peak	E: 269604 N: 4338733	Non-Wetland Water of the US Water of the State	Intermittent	210 m, 689 ft	--
Oiler Peak	E: 269604 N: 4338733	Non-Wetland Water of the US Water of the State	Intermittent	274 m, 898 ft	--
Oiler Peak	E: 269604 N: 4338733	Non-Wetland Water of the US Water of the State	Intermittent	2,060 m, 6,758 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	7.66 m, 25.1 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	10.3 m, 33.7 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	11.6 m, 38.0 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	39.2 m, 129 ft	--

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	57.8 m, 190 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	66.0 m, 217 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	71.5 m, 235 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	101 m, 331 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	102 m, 333 ft	--
Oiler Peak	E: 269604 N: 4338733	Non-Wetland Water of the US Water of the State	Intermittent	141 m, 461 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	145 m, 475 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	181 m, 592 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	237 m, 779 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	253 m, 829 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	277 m, 908 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	287 m, 940 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	390 m, 1,279 ft	--
Tehachapi North	E: 611106 N: 4104915	Non-Wetland Water of the US Water of the State	Intermittent	434 m, 1,424 ft	--
Tehachapi North	E: 611106 N: 4104915	Non-Wetland Water of the US Water of the State	Intermittent	437 m, 1,433 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	548 m, 1,796 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	638 m, 2,091 ft	--
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	1,176 m, 3,858 ft	--
Oiler Peak	E: 269604 N: 4338733	Non-Wetland Water of the US Water of the State	Intermittent	1,729 m, 5,676 ft	--
Tehachapi North	E: 611106 N: 4104915	Non-Wetland Water of the US Water of the State	Intermittent	2,221 m, 7,286 ft	--

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Keene	E: 262956 N: 4107511	Non-Wetland Water of the US Water of the State	Intermittent	1,206 m, 3,958 ft	--
Edison	E: 629591 N: 4336417	Non-Wetland Water of the US Water of the State	Intermittent	377 m, 1,236 ft	--
Edison	E: 629591 N: 4336417	Non-Wetland Water of the US Water of the State	Intermittent	463 m, 1,519 ft	--

#### 4.3.5 Impacts to Biological Resources from the Antelope Valley Corridor

##### A. SENSITIVE VEGETATION

The Antelope Valley Corridor would not result in impacts to sensitive vegetation communities.

The Antelope Valley Corridor would not result in any known impacts to state and/or federally listed or candidate plant species.

The Antelope Valley Corridor may result in impacts to the following plant species of special concern:

- Alkali mariposa lily
- Lancaster milk-vetch, and
- Parry's spineflower

##### B. SENSITIVE WILDLIFE

The Antelope Valley Corridor may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Mohave ground squirrel

The Antelope Valley Corridor may result in impacts to the following wildlife species of special concern:

- San Diego horned lizard

No marine/anadromous fish resources would be impacted by this portion of the HST corridor.

No regional wildlife movement/migration corridors are located within the Antelope Valley Corridor, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals.

##### C. JURISDICTIONAL WATERS

The Antelope Valley Corridor is expected to impact 25.0 ha (61.8 ac) of lacustrine waters and 18.3 ha (45.2 ac) of palustrine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The Antelope Valley Corridor is not anticipated to impact any non-wetland waters. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-5.



**Table 4.3-5**  
**Summary of Jurisdictional Waters from the Antelope Valley Corridor of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Rosamond	E: 276193 N: 5153835	Wetland Water of the US Water of the State	Lacustrine	--	25.019 ha, 61.824 ac
Rosamond	E: 276193 N: 5153835	Wetland Water of the US Water of the State	Lacustrine	--	0.033 ha, 0.080 ac
Lancaster West	E: 267789 N: 4922382	Wetland Water of the US Water of the State	Palustrine	--	0.479 ha, 1.182 ac
Rosamond	E: 276193 N: 5153835	Wetland Water of the US Water of the State	Palustrine	--	3.390 ha, 8.376 ac
Rosamond	E: 276193 N: 5153835	Wetland Water of the US Water of the State	Palustrine	--	0.409 ha, 1.010 ac
Rosamond	E: 276193 N: 5153835	Wetland Water of the US Water of the State	Palustrine	--	5.310 ha, 13.120 ac
Rosamond	E: 276193 N: 5153835	Wetland Water of the US Water of the State	Palustrine	--	8.669 ha, 21.422 ac

#### 4.3.6 Impacts to Biological Resources from the Soledad Canyon Corridor

##### A. SENSITIVE VEGETATION

The Soledad Canyon Corridor may result in impacts to the following sensitive vegetation communities:

- Riversidean alluvial fan sage scrub
- Southern coast live oak riparian forest
- Southern cottonwood-willow riparian forest, and
- Southern riparian scrub

The Soledad Canyon Corridor may result in impacts to the following state and/or federally listed or candidate plant species:

- Slender-horned spineflower

Some populations of slender-horned spineflower would not be impacted in areas planned for tunneling. However, other populations in areas of cut and fill and structure would be impacted.

The Soledad Canyon Corridor may result in impacts to the following plant species of special concern:

- Davidson's bush mallow, and
- Slender mariposa lily

##### B. SENSITIVE WILDLIFE

The Soledad Canyon Corridor may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Santa Ana sucker, and
- Unarmored threespine stickleback

Impacts to unarmored threespine stickleback will be avoided in areas planned for tunneling. However, impacts will occur in habitat areas for this species designated as cut and fill or structure.

The Soledad Canyon Corridor may result in impacts to the following wildlife species of special concern:

- Le Conte's thrasher, and
- San Diego horned lizard

Impacts to some populations of San Diego horned lizard will be avoided in areas planned for tunneling, but will not be avoided in areas of cut and fill or structure.

The Soledad Canyon Corridor may result in impacts to marine/anadromous fish resources due to potential impacts to the Santa Clara River. Construction of elevated structures bridging the river would minimize impacts to these resources.

The Soledad Canyon Corridor would impact three regional wildlife movement/migration corridors. These movement corridors include:

- Soledad Canyon-Mint Canyon Linkage  
This linkage would be impacted by 10.9 km (0.68 mi) of structure and 6.15 km (3.82 mi) of cut and fill. Approximately 1.23 km (0.78 mi) of the Soledad Canyon Corridor where it intersects this linkage would be in tunnel, so impacts would be avoided in these areas. This portion of the HST system could potentially impact movement throughout the Angeles National Forest and the following key species that utilize this area: unarmored three-spine stickleback, southwestern willow flycatcher, western spadefoot, and mammals. Short-term, temporary impacts to wildlife movement during construction in areas of structure and cut and fill are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.
- Santa Clara River Linkage  
This linkage would be impacted by 2.30 km (1.43 mi) of structure and 0.45 km (0.28 mi) of cut and fill. This portion of the HST system could potentially impact movement within the Santa Clara River which supports movement of fish and bird species from the Pacific Ocean to the Angeles National Forest. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.
- I-5 Newhall Pass Linkage  
This linkage would be impacted by 2.16 km (1.34 mi) of structure. This portion of the HST system could potentially impact movement from the hills west of the I-5 south of the I-5/SR-14 interchange to the Angeles National Forest by the larger mammals that utilize this linkage. Short-term, temporary impacts to wildlife movement during construction are anticipated. However, long-term, permanent impacts to wildlife movement could be minimized during final design through the creation of underpass structures that are of sufficient size to facilitate wildlife movement.

In addition to impacts on regional wildlife movement corridors, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals.

## C. JURISDICTIONAL WATERS

The Soledad Canyon Corridor is expected to impact 12.6 ha (31.2 ac) of lacustrine waters, 10.1 ha (25.0 ac) of palustrine waters, and 2.3 ha (5.7 ac) of riverine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The corridor is also expected to impact 2.7 km (1.7 mi) of non-wetland intermittent streambed and 45 m (146 ft) of non-wetland perennial streambed associated with the Agua Dulce Canyon Creek, Aliso Canyon Creek, California Aqueduct, Placerita Creek, and the Santa Clara River. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-6.

**Table 4.3-6**  
**Summary of Jurisdictional Waters from the Soledad Canyon Corridor of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Lacustrine	--	0.732 ha, 1.808 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Lacustrine	--	11.893 ha, 29.388 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	3.880 ha, 9.589 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	2.170 ha, 5.362 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.116 ha, 0.288 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.119 ha, 0.293 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.251 ha, 0.621 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.476 ha, 1.777 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.647 ha, 1.598 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.069 ha, 0.170 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	1.973 ha, 4.876 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.063 ha, 0.155 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.132 ha, 0.327 ac

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Palustrine	--	0.211 ha, 0.521 ac
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Riverine	--	2.295 ha, 5.671 ac
Agua Dulce	E: 429123 N: 4455915	Non-wetland Water of the US Water of the State	Intermittent	891 m, 2,924 ft	--
Acton	E: 251915 N: 4459664	Non-wetland Water of the US Water of the State	Intermittent	104 m, 342 ft	--
Palmdale	E: 582388 N: 4687355	Wetland Water of the US Water of the State	Intermittent	1,099 m, 3,607 ft	--
Mint Canyon	E: 606316 N: 4456331	Non-wetland Water of the US Water of the State	Intermittent	635 m, 2,083 ft	--
Acton	E: 251915 N: 4459664	Non-wetland Water of the US Water of the State	Perennial	44.5 m, 146 ft	--

#### 4.3.7 Impacts to Biological Resources from the Metrolink/UPRR: Sylmar Station North Segment

##### A. SENSITIVE VEGETATION

The Metrolink/UPRR: Sylmar Station North Segment would not result in impacts to any sensitive vegetation communities.

The Metrolink/UPRR: Sylmar Station North Segment would not result in impacts to any known state and/or federally listed or candidate plant species, or plant species of special concern.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Metrolink/UPRR: Sylmar Station North Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Sylmar Station North Segment impact area, so none would be impacted by this portion of the HST alignment. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### C. JURISDICTIONAL WATERS

The Metrolink/UPRR: Sylmar Station North Segment is not anticipated to impact any jurisdictional waters or wetlands.

#### **4.3.8 Impacts to Biological Resources from the Metrolink/UPRR: Sylmar Station to Burbank Airport Segment**

##### **A. SENSITIVE VEGETATION**

The Metrolink/UPRR: Sylmar Station to Burbank Airport Segment would not result in impacts to any sensitive vegetation communities.

The Metrolink/UPRR: Sylmar Station to Burbank Airport Segment would not result in impacts to any known state and/or federally listed or candidate plant species.

The Metrolink/UPRR: Sylmar Station to Burbank Airport Segment may result in impacts to the following plant species of special concern:

- Davidson's bush mallow

However, impacts to known populations of Davidson's bush mallow would be minimized in areas planned for aerial construction.

##### **B. SENSITIVE WILDLIFE**

The Metrolink/UPRR: Sylmar Station to Burbank Airport Segment may result in impacts to the following state and or federally listed or candidate wildlife species:

- Western yellow-billed cuckoo

However, impacts to habitat for western yellow-billed cuckoo would be minimized in areas planned for aerial construction.

No wildlife species of special concern would be impacted by the Metrolink/UPRR: Sylmar Station to Burbank Airport Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Sylmar Station to Burbank Airport Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### **C. JURISDICTIONAL WATERS**

The Metrolink/UPRR: Sylmar Metrolink Station to Burbank Airport Segment is expected to impact 13.9 ha (34.4 ac) of lacustrine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. This segment is also expected to impact 0.6 km (0.4 mi) of non-wetland intermittent wash associated with the Tujunga Wash. These waters would be considered state and federally jurisdictional. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-7.

**Table 4.3-7**  
**Summary of Jurisdictional Waters from the Metrolink/UPRR: Sylmar Metrolink Station to**  
**Burbank Airport Segment of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Lacustrine	--	0.002 ha, 0.006 ac
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Lacustrine	--	13.906 ha, 34.362 ac
Van Nuys	E: 612549 N: 3993979	Non-wetland Water of the US Water of the State	Intermittent Wash	615 m, 2,017 ft	--

#### **4.3.9 Impacts to Biological Resources from Burbank Airport to Downtown Burbank Segment**

##### **A. SENSITIVE VEGETATION**

No sensitive vegetation communities would be impacted by the Burbank Airport to Downtown Burbank Segment.

No state and/or federally listed or candidate plant species, or plant species of special concern would be impacted by the Burbank Airport to Downtown Burbank Segment.

##### **B. SENSITIVE WILDLIFE**

No state and/or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Burbank Airport to Downtown Burbank Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Burbank Airport to Downtown Burbank Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### **C. JURISDICTIONAL WATERS**

The Burbank Airport to Downtown Burbank Segment is not anticipated to impact any jurisdictional waters or wetlands.

#### **4.3.10 Impacts to Biological Resources from the Metrolink/UPRR: Glendale Segment**

##### **A. SENSITIVE VEGETATION**

The Metrolink/UPRR: Glendale Segment would not result in impacts to any sensitive vegetation communities.



No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Metrolink/UPRR: Glendale Segment.

#### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Metrolink/UPRR: Glendale Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Glendale Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

#### C. JURISDICTIONAL WATERS

The Metrolink/UPRR: Glendale Segment is not anticipated to impact any jurisdictional waters or wetlands.

### 4.3.11 Impacts to Biological Resources from the Metrolink/UPRR: Over and Under I-5 and SR-110 Segment

#### A. SENSITIVE VEGETATION

The Metrolink/UPRR: Over and Under I-5 and SR-110 Segment would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Metrolink/UPRR: Over and Under I-5 and SR-110 Segment.

#### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Metrolink/UPRR: Over and Under I-5 and SR-110 Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Over and Under I-5 and SR-110 Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

#### C. JURISDICTIONAL WATERS

The Metrolink/UPRR: Over and Under I-5 and SR-110 Segment is expected to impact 0.7 km (0.4 mi) of non-wetland perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This segment is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-8.

**Table 4.3-8**  
**Summary of Jurisdictional Waters from the Metrolink/UPRR: Over and Under I-5**  
**and SR-110 Segment of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	721 m, 2,366 ft	--

#### **4.3.12 Impacts to Biological Resources from the Metrolink/UPRR: Over I-5 and SR-110, South Section Segment**

##### **A. SENSITIVE VEGETATION**

The Metrolink/UPRR: Over I-5 and SR-110, South Section Segment would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Metrolink/UPRR: Over I-5 and SR-110, South Section Segment.

##### **B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Metrolink/UPRR: Over I-5 and SR-110, South Section Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Over I-5 and SR-110 South Section Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### **C. JURISDICTIONAL WATERS**

The Metrolink/UPRR: Over I-5 and SR-110, South Section Segment is expected to impact 0.5 km (0.3 mi) of non-wetland intermittent wash associated with the Arroyo Seco and 3.5 km (2.2 mi) of non-wetland perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This segment is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-9.

**Table 4.3-9**  
**Summary of Jurisdictional Waters from the Metrolink/UPRR: Over I-5**  
**and SR-110, South Section Segment of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Intermittent	94.6 m, 311 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Intermittent	411 m, 1,349 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	5.2 m, 16.9 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	119 m, 390 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	661 m, 2,169 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	841 m, 2,759 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1,922 m, 6,304 ft	--

#### **4.3.13 Impacts to Biological Resources from the Metrolink/UPRR: Under I-5 and SR-110, South Section Segment**

##### **A. SENSITIVE VEGETATION**

The Metrolink/UPRR: Under I-5 and SR-110, South Section Segment would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Metrolink/UPRR: Under I-5 and SR-110, South Section Segment.

##### **B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Metrolink/UPRR: Under I-5 and SR-110, South Section Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Under I-5 and SR-110, South Section Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

## C. JURISDICTIONAL WATERS

The Metrolink/UPRR: Under I-5 and SR-110, South Section Segment is expected to impact 0.4 km (0.3 mi) of non-wetland intermittent wash associated with the Arroyo Seco, and 3.5 km (2.2 mi) of non-wetland perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This segment is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-10.

**Table 4.3-10**  
**Summary of Jurisdictional Waters from the Metrolink/UPRR: Under I-5**  
**and SR-110, South Section Segment of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Intermittent	411 m, 1,349 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	0.29 m, 0.94 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	119 m, 390 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	661 m, 2,169 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	841 m, 2,759 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1,922 m, 6,304 ft	--

## 4.3.14 Impacts to Biological Resources from the I-5: Glendale Segment

## A. SENSITIVE VEGETATION

The I-5: Glendale Segment may result in impacts to the following sensitive vegetation community:

- California walnut woodland

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the I-5: Glendale Segment.

## B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the I-5: Glendale Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the I-5: Glendale Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local

wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

### C. JURISDICTIONAL WATERS

The I-5: Glendale Segment is expected to impact 41.1 ha (101.5 ac) of riverine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. This segment is also expected to impact 6.3 km (3.9 mi) of non-wetland perennial streambed associated with the Los Angeles River, and 0.5 km (0.3 mi) of intermittent wash associated with Verdugo Wash. These waters would be considered state and federally jurisdictional. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-11.

**Table 4.3-11**  
**Summary of Jurisdictional Waters from the I-5: Glendale Segment of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Hollywood	E: 423039 N: 3762527	Wetland Water of the US Water of the State	Riverine	--	10.995 ha, 27.169 ac
Hollywood	E: 423039 N: 3762527	Wetland Water of the US Water of the State	Riverine	--	1.336 ha, 3.302 ac
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Riverine	--	2.627 ha, 6.491 ac
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Riverine	--	26.117 ha, 64.537 ac
Hollywood	E: 423039 N: 3762527	Non-wetland Water of the US Water of the State	Perennial	3.82 m, 12.5 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	277 m, 908 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	587 m, 1,924 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	670 m, 2,200 ft	--
Hollywood	E: 423039 N: 3762527	Non-wetland Water of the US Water of the State	Perennial	2,084 m, 6,838 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	2,711 m, 8,897 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	128 m, 418 ft	--
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Perennial	398 m, 1,305 ft	--

**4.3.15 Impacts to Biological Resources from the I-5: Silverlake Aerial/Cut and Cover Option****A. SENSITIVE VEGETATION**

The I-5: Silverlake Aerial/Cut and Cover Option would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the I-5: Silverlake Aerial/Cut And Cover Option.

**B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the I-5: Silverlake Aerial/Cut And Cover Option.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the I-5: Silverlake Aerial/Cut and Cover Option impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

**C. JURISDICTIONAL WATERS**

The I-5: Silverlake Aerial/Cut and Cover Option is expected to impact 2.5 ha (6.2 ac) of riverine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. The segment is also expected to impact 0.2 km (0.1 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-12.

**Table 4.3-12**  
**Summary of Jurisdictional Waters from the I-5: Silverlake Aerial/Cut and Cover Option of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Hollywood	E: 423039 N: 3762527	Wetland Water of the US Water of the State	Riverine	--	2.517 ha, 6.220 ac
Hollywood	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	167 m, 547 ft	--



**4.3.16 Impacts to Biological Resources from the LAUS East Bank: North Segment****A. SENSITIVE VEGETATION**

The LAUS East Bank: North Segment would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the LAUS East Bank: North Segment.

**B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the LAUS East Bank: North Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the LAUS East Bank: North Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

**C. JURISDICTIONAL WATERS**

The LAUS East Bank: North Segment is expected to impact 0.98 km (0.6 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This segment is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-13.

**Table 4.3-13  
Summary of Jurisdictional Waters from the LAUS East Bank: North Segment of the  
High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	0.29 m, 0.94 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	119 m, 390 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	661 m, 2,169 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1,053 m, 3,454 ft	--

**4.3.17 Impacts to Biological Resources from the LAUS Existing: East Segment****A. SENSITIVE VEGETATION**

The LAUS Existing: East Segment would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the LAUS Existing: East Segment.

**B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the LAUS Existing: East Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the LAUS Existing: East Segment impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

**C. JURISDICTIONAL WATERS**

The LAUS Existing: East Segment is expected to impact 0.98 km (0.6 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This segment is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-14.

**Table 4.3-14**  
**Summary of Jurisdictional Waters from the LAUS Existing: East Segment of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1.89 m, 6.2 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	12.1 m, 39.8 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	73.1 m, 240 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	426 m, 1,397 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	472 m, 1,547 ft	--

**4.3.18 Impacts to Biological Resources from the LAUS Existing: South Segment****A. SENSITIVE VEGETATION**

The LAUS Existing: South Segment would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the LAUS Existing: South Segment.

**B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the LAUS Existing: South Segment.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the LAUS Existing: South Segment, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

**C. JURISDICTIONAL WATERS**

The LAUS Existing: South Segment is expected to impact 0.5 km (0.3 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This segment is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-15.

**Table 4.3-15  
Summary of Jurisdictional Waters from the LAUS Existing: South Segment of the  
High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1.89 m, 6.2 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	73.1 m, 240 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	426 m, 1,397 ft	--

#### 4.3.19 Impacts to Biological Resources from the East Connection

##### A. SENSITIVE VEGETATION

The East Connection would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the East Connection.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the East Connection.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the East Connection, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### C. JURISDICTIONAL WATERS

The East Connection would not result in impacts to jurisdictional waters or wetlands.

#### 4.3.20 Impacts to Biological Resources from the South Connection

##### A. SENSITIVE VEGETATION

The South Connection would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the South Connection.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the South Connection.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the South Connection, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### C. JURISDICTIONAL WATERS

The South Connection is expected to impact 3.5 km (2.2 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This connection is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-16.

**Table 4.3-16**  
**Summary of Jurisdictional Waters from the South Connection of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1.89 m, 6.2 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	4.2 m, 13.7 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	12.1 m, 39.8 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1,539 m, 5,048 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1,992 m, 6,537 ft	--

#### 4.3.21 Impacts to Biological Resources from the Palmdale Station Siding

##### A. SENSITIVE VEGETATION

The Palmdale Station Siding would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Palmdale Station Siding.

##### B. SENSITIVE WILDLIFE

The Palmdale Station Siding may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Mohave ground squirrel

The Palmdale Station Siding may result in impacts to the following wildlife species of special concern:

- San Diego horned lizard
- Le Conte's thrasher, and
- Cooper's hawk

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Palmdale Station Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals.

### C. JURISDICTIONAL WATERS

The Palmdale Station Siding would not result in impacts to any jurisdictional waters or wetlands.

#### 4.3.22 Impacts to Biological Resources from the Metrolink/UPRR: Sylmar Station Siding

##### A. SENSITIVE VEGETATION

The Metrolink/UPRR: Sylmar Station Siding would not result in impacts to any sensitive vegetation communities.

The Metrolink/UPRR: Sylmar Station Siding would not result in impacts to any state and/or federally listed or candidate plant species.

The Metrolink/UPRR: Sylmar Station Siding may result in impacts to the following plant species of special concern:

- Davidson's bush mallow

However, impacts to known populations of Davidson's bush mallow would be minimized due to use of an aerial construction technique.

##### B. SENSITIVE WILDLIFE

The Metrolink/UPRR: Sylmar Station Siding may result in impacts to the following state and/or federally listed or candidate wildlife species:

- Western yellow-billed cuckoo

However, impacts to habitat for western yellow-billed cuckoo would be minimized due to use of an aerial construction technique.

No wildlife species of special concern would be impacted by the Metrolink/UPRR: Sylmar Station Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Sylmar Metrolink/UPRR: Sylmar Station Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

### C. JURISDICTIONAL WATERS

The Metrolink/UPRR: Sylmar Station Siding is expected to impact 0.9 km (0.5 mi) of intermittent streambed associated with the East Canyon Channel and the Pocoima Wash. These waters would be considered state and federally jurisdictional. This siding is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-27.



**Table 4.3-17**  
**Summary of Jurisdictional Waters from the Metrolink/UPRR: Sylmar Station Siding of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	258 m, 847 ft	--
San Fernando	E: 609505 N: 4225116	Non-wetland Water of the US Water of the State	Intermittent	618 m, 2,026 ft	--

#### 4.3.23 Impacts to Biological Resources from the Burbank Airport Station Siding

##### A. SENSITIVE VEGETATION

The Burbank Airport Station Siding would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Burbank Airport Station Siding.

##### B. SENSITIVE WILDLIFE

The Burbank Airport Station Siding would not result in any state and/or federally listed or candidate wildlife species.

No wildlife species of special concern would be impacted by the Burbank Airport Station Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Burbank Airport Station Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### C. JURISDICTIONAL WATERS

The Burbank Airport Station Siding is expected to impact 2.4 ha (5.9 ac) of lacustrine waters and 0.01 ha (0.03 ac) of palustrine waters. The streambed is expected to include wetlands and would be considered state and federally jurisdictional. This siding is not anticipated to impact any non-wetland waters. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-18.

**Table 4.3-18**  
**Summary of Jurisdictional Waters from the Burbank Airport Station Siding of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Lacustrine	--	0.002 ha, 0.006 ac
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Lacustrine	--	2.391 ha, 5.908 ac
Van Nuys	E: 612549 N: 3993979	Wetland Water of the US Water of the State	Palustrine	--	0.012 ha, 0.030 ac

#### **4.3.24 Impacts to Biological Resources from the Metrolink/UPRR: Burbank Downtown Station Siding**

##### **A. SENSITIVE VEGETATION**

The Metrolink/UPRR: Burbank Downtown Station Siding would not result in impacts to any sensitive vegetation communities.

The Metrolink/UPRR: Burbank Downtown Station Siding may result in impacts to the following state and/or federally listed or candidate plant species:

- San Fernando Valley spineflower

However, impacts to known populations of San Fernando Valley spineflower would be minimized due to use of an aerial construction technique.

No plant species of special concern would be impacted by the Metrolink/UPRR: Burbank Downtown Station Siding.

##### **B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Metrolink/UPRR: Burbank Downtown Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Metrolink/UPRR: Burbank Downtown Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### **C. JURISDICTIONAL WATERS**

The Metrolink/UPRR: Burbank Downtown Station Siding alignment is expected to impact 4.4 ha (10.8 ac) of riverine waters. These waters are expected to include wetlands and would be considered state and federally jurisdictional. This alignment is also expected to impact 0.7 km (0.4 mi) of non-wetland

intermittent streambed associated with the Verdugo Wash and 0.3 km (0.2 mi) of non-wetland perennial streambed associated with the Los Angeles River. Impacts to jurisdictional waters and wetlands are shown below in Table 4.3-19.

**Table 4.3-19**  
**Summary of Jurisdictional Waters from the Metrolink/UPRR: Burbank Downtown Station Siding of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Riverine	--	0.249 ha, 0.614 ac
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Riverine	--	1.501 ha, 3.710 ac
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Riverine	--	2.627 ha, 6.491 ac
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Perennial	277 m, 908 ft	--
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Intermittent	128 m, 418 ft	--
Burbank	E: 424969 N: 3993577	Wetland Water of the US Water of the State	Intermittent	570 m, 1,871 ft	--

#### 4.3.25 Impacts to Biological Resources from the I-5: Burbank Downtown Siding

##### A. SENSITIVE VEGETATION

The I-5: Burbank Downtown Siding would not result in impacts to any sensitive vegetation communities.

The I-5: Burbank Downtown Siding may result in impacts to the following state and/or federally listed or candidate plant species:

- San Fernando Valley spineflower

However, impacts to known populations of San Fernando Valley spineflower would be minimized due to use of an aerial construction technique.

No plant species of special concern would be impacted by the I-5: Burbank Downtown Siding.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the I-5: Burbank Downtown Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the I-5: Burbank Downtown Siding impact area (including station approach tracks and maintenance facilities), so none would be

impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

#### C. JURISDICTIONAL WATERS

The I-5: Burbank Downtown Siding is not expected to result in impacts to jurisdictional waters or wetlands.

### 4.3.26 Impacts to Biological Resources from the Burbank Downtown Station Siding

#### A. SENSITIVE VEGETATION

The Burbank Downtown Station Siding would not result in any impacts to sensitive vegetation communities.

The Burbank Downtown Station Siding may result in impacts to the following state and/or federally listed or candidate plant species:

- San Fernando Valley spineflower

However, impacts to known populations of San Fernando Valley spineflower would be minimized due to use of an aerial construction technique.

No plant species of special concern would be impacted by the Burbank Downtown Station Siding.

#### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Burbank Downtown Station Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the Burbank Downtown Station Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

#### C. JURISDICTIONAL WATERS

The Burbank Downtown Station Siding is expected to impact 3.5 km (1.5 mi) of intermittent streambed associated with the Burbank Western Channel. These waters would be considered state and federally jurisdictional. This siding is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-20.

**Table 4.3-20**  
**Summary of Jurisdictional Waters from the Burbank Downtown Station Siding of the High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Burbank	E: 424969 N: 3993577	Non-wetland Water of the US Water of the State	Intermittent	2,468 m, 8,100 ft	--

#### 4.3.27 Impacts to Biological Resources from the LAUS Existing Siding

##### A. SENSITIVE VEGETATION

The LAUS: Existing Siding would not result in impact to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the LAUS: Existing Siding.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the LAUS: Existing Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the LAUS Existing Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

##### C. JURISDICTIONAL WATERS

The LAUS Existing Siding would not result in impacts to jurisdictional waters or wetlands.

#### 4.3.28 Impacts to Biological Resources from the LAUS South Siding

##### A. SENSITIVE VEGETATION

The L.A. Union Station: South Siding would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the LAUS: South Siding.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the LAUS: South Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the LAUS South Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

#### C. JURISDICTIONAL WATERS

The LAUS South Siding is expected to impact 0.6 km (0.4 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This siding is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-21.

**Table 4.3-21**  
**Summary of Jurisdictional Waters from the LAUS South Siding of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	41.2 m, 135 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	60.8 m, 200 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	73.1 m, 240 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	472 m, 1,547 ft	--

#### 4.3.29 Impacts to Biological Resources from the LAUS: East Bank Siding

##### A. SENSITIVE VEGETATION

The LAUS: East Bank Siding would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the LAUS: East Bank Siding.

##### B. SENSITIVE WILDLIFE

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by LAUS: East Bank Siding.

No marine/anadromous fish resources would be impacted by this portion of the HST alignment.

No regional wildlife movement/migration corridors are located within the LAUS East Bank Station Siding impact area (including station approach tracks and maintenance facilities), so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of



large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

#### C. JURISDICTIONAL WATERS

The LAUS East Bank Siding is expected to impact 1.1 km (0.7 mi) of non-wetland perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. This siding is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-22.

**Table 4.3-22**  
**Summary of Jurisdictional Waters from the LAUS East Bank Siding of the**  
**High-Speed Train Alternative**

USGS Quadrangle	Location (UTM)	Jurisdictional Determination	Water Regime	Area of Temporary Disturbance (Linear Meters, Feet)	Area of Temporary Disturbance (Hectares, Acres)
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1.89 m, 6.2 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	4.18 m, 13.7 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	12.1 m, 39.8 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	41.2 m, 135 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	45.8 m, 150 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	60.8 m, 199.5 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	73.1 m, 240 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	426 m, 1,397 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	472 m, 1,547 ft	--

#### 4.3.30 Impacts to Biological Resources from the Maintenance Yard

##### A. SENSITIVE VEGETATION

The Maintenance Yard would not result in impacts to any sensitive vegetation communities.

No state or federally listed or candidate plant species, or plant species of special concern would be impacted by the Maintenance Yard.

**B. SENSITIVE WILDLIFE**

No state or federally listed or candidate wildlife species, or wildlife species of special concern would be impacted by the Maintenance Yard.

No marine/anadromous fish resources would be impacted by this portion of the HST system.

No regional wildlife movement/migration corridors are located within the Maintenance Yard impact area, so none would be impacted. However, fencing of the right-of-way may limit local wildlife movement, most notably of large mammals, although limitations to such movement are not anticipated to be substantial due to the highly urbanized areas which occur along this segment.

**C. JURISDICTIONAL WATERS**

The Maintenance Yard is expected to impact 1.8 km (1.1 mi) of perennial streambed associated with the Los Angeles River. These waters would be considered state and federally jurisdictional. The Maintenance Yard is not anticipated to impact any jurisdictional wetlands. Impacts to jurisdictional waters are shown below in Table 4.3-23.

**Table 4.3-23**  
**Summary of Jurisdictional Waters from the Maintenance Yard of the**  
**High-Speed Train Alternative**

<b>USGS Quadrangle</b>	<b>Location (UTM)</b>	<b>Jurisdictional Determination</b>	<b>Water Regime</b>	<b>Area of Temporary Disturbance (Linear Meters, Feet)</b>	<b>Area of Temporary Disturbance (Hectares, Acres)</b>
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	0.29 m, 0.94 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	45.8 m, 150 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	60.8 m, 200 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	661 m, 2,169 ft	--
Los Angeles	E: 230596 N: 3766051	Non-wetland Water of the US Water of the State	Perennial	1,053 m, 3,454 ft	--

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## 6.0 SOURCES OF DATA/INFORMATION

- American Ornithologists' Union. *Check-List of North American Birds*, 6<sup>th</sup> edition. American Ornithologists' Union, Washington, D.C., 1983.
- American Ornithologists' Union. *Thirty-seventh Supplement to the American Ornithologists' Union Check-List of North American Birds*. Auk 106:532-538, 1989.
- American Ornithologists' Union. *Supplement to the American Ornithologists' Union Check-List of North American Birds*. American Ornithologists' Union, Washington, D.C., 1995.
- Atwood, J.L. *Status review of the California Gnatcatcher (Poliophtila californica)*. Manomet Bird Observatory, P.O. Box 1770, Manomet, MA 02345, 1990.
- Atwood, J.L. *Rare, Local, Little-Known, and Declining North American Breeders - A Closer Look*. Birding 25: 228-233, 1992.
- Beier, P. *Dispersal of Juvenile Cougars in Fragmented Habitat*. Journal of Wildlife Management 59:228-237, 1995.
- Beier, P. *Determining Minimum Habitat Requirements and Habitat Corridors for Cougars*. Conservation Biology 7:94-108, 1993.
- Beier, P. and S. Loe. *A Checklist for Evaluating Impacts to Wildlife Movement Corridors*. Wildlife Society Bulletin 20:434-40, 1992.
- Beier, P. and R. Noss. *Do Habitat Corridors Provide Connectivity?* Conservation Biology 12:1241-52, 1998.
- Bennett, A.F. *Habitat Corridors and the Conservation of Small Mammals in a Fragmented Forest Environment*. Landscape Ecology 4:109-122, 1990.
- CDFG. *Special Plants List*. California Department of Fish and Game, Natural Heritage Division, Sacramento, California. January 2001.
- CDFG. *Rarefind Database*. California Department of Fish and Game, Natural Heritage Division, Sacramento, California, 2002.
- California Department of Fish and Game. *Endangered and Threatened Animals of California*. State of California the Resource Agency, California Department of Fish and Game, Natural Heritage Division, Natural Diversity Data Base, October 2002.
- California Department of Fish and Game. *Endangered and Threatened Plants of California*. State of California the Resource Agency, California Department of Fish and Game, Natural Heritage Division, Natural Diversity Data Base, October 2002.
- California Department of Fish and Game. *California's Plants and Animals*. Habitat Conservation Planning Branch, 2003. <http://www.dfg.ca.gov/hcpb>.
- California Department of Fish and Game. 2003. California's Threatened and Endangered Species. [http://www.dfg.ca.gov/te\\_species](http://www.dfg.ca.gov/te_species).

- California Department of Fish and Game. *California Wildlife Habitat Relationships System*. California Interagency Wildlife Task Group, 2003. <http://www.dfg.ca.gov/whdab>.
- California Department of Fish and Game. *Special Animals*. California Department of Fish and Game, Natural Diversity Data Base, Sacramento, California, July 2002.
- California Wilderness Coalition. *Missing Linkages: Restoring Connectivity to the California Landscape*. San Diego Zoo, San Diego, California, November 2000.
- Environmental Laboratory. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, United States Army Corps of Engineers Waterways Experimental Station, Vicksburg, Mississippi. 1987.
- Farhig, L. and G. Merriam. *Habitat Patch Connectivity and Population Survival*. Ecology 66:1,762-1,768, 1985.
- Franzreb, K.E. *Ecology and Conservation of the Endangered Least Bell's Vireo*. United States Fish and Wildlife Service Biological Report 89(1), 1989.
- Garrett, K. and J. Dunn. *Birds of Southern California: Status and Distribution*. Los Angeles Audubon Society, Los Angeles, California, 1981.
- Hall, E. *The Mammals of North America*. John Wiley and Sons, New York, New York, 1981.
- Harris, L.D. and P.B. Gallagher. 1989. New Initiatives for Wildlife Conservation: The Need for Movement Corridors. G. Mackintosh (ed.), *Preserving Communities and Corridors*, Defenders of Wildlife, Washington, D.C. 96 pp.
- Hickman, J. C. *The Jepson Manual Higher Plants of California*. University of California Press, Berkeley, Editor 1993.
- Hix, A.B. *Sensitivity of San Diego's Biological Resources: An Informational Report*. City of San Diego Planning Department, Development and Environmental Planning Division, 1990.
- Holland, R. F. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Non-game Heritage Program, State of California Department of Fish and Game, Sacramento, 1986.
- Jameson, E.W. and H.J. Peeters. *California Mammals*. University of California Press, Berkeley, California, 1988.
- Jennings, M.R. and M.P. Hayes. *Amphibians and Reptile Species of Special Concern in California*. California Department of Fish and Game, Inland Fisheries Division, Contract No. 8023, 1994.
- Jones, J.K., D.C. Carter, H.H. Genoway, R.S. Hoffman and D.W. Rice, Revised *Checklist of North American Mammals North of Mexico*, Occasional Papers, Museum of Texas Technical University, No. 80., 1982.
- MacArthur, R.H. and E.O. Wilson. *The Theory of Island Biogeography*. Princeton University Press, Princeton, New Jersey, 1967.
- Munz, P.A. *A Flora of Southern California*. University of California Press, Berkeley, 1974.
- Noss, R.F. *A Regional Landscape Approach to Maintain Diversity*. BioScience 33:700-706, 1983.



- Palmer, R. S., Ed. *Handbook of North American Birds, V. 1, Loons through Flamingos*. Yale Univ. Press, New Haven, Conn., 1962.
- PCR Services Corporation, Frank Hovore and Associates, and FORMA Systems. *Executive Summary of the Proposed Los Angeles County Significant Ecological Areas*, Los Angeles County, California, 2000.
- Remsen, J.V., Jr. *Bird Species of Special Concern in California*. California Department of Fish and Game, Nongame Investigations Report 78-1, Sacramento, California, 1978.
- Sawyer, J.O. and T. Keeler-Wolf. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, California, 1995.
- Schoenherr, A.A. *The Herpetofauna of the San Gabriel Mountains, Los Angeles County, California*. Special publication, Southwest Herpetologists' Society, 1976.
- Simberloff, D. and J. Cox. *Consequences and Costs of Conservation Corridors*. Conservation Biology 1:63-71, 1987.
- Skinner, M.W., and B.M. Pavlik, eds. *Inventory of Rare and Endangered Vascular Plants of California*. California Native Plant Society Special Publication No. 1 (Fifth Edition, 1999 Electronic Inventory Update). Sacramento, CA. Vi + 338 pp, 1994.
- Small, A. *California Birds: Their Status and Distribution*. Ibis Publishing Company, Vista, California, 1994.
- Soule, M.E. *Viable Populations for Conservation*. Cambridge University Press. New York, New York, 1987.
- Stebbins, R.C., *A Field Guide to Western Reptiles and Amphibians*. Houghton Mifflin Company, Boston, Massachusetts, 1985.
- Stebbins, R.C. and N.W. Cohen. *A Natural History of Amphibians*. Princeton University Press, Princeton, New Jersey, 1995.
- Unitt, P. *The Birds of San Diego County*. San Diego Society of Natural History, Memoir 13, San Diego, California, 1984.
- U.S. Army Corps of Engineers. *Corps of Engineers Wetlands Delineation Manual*. 1987. <http://www.spl.usace.army.mil/>.
- USFWS. *Endangered and Threatened Wildlife and Plants; Determination of Endangered or Threatened Status for Four Southwestern California Plants from Vernal Wetlands and Clay Soils*. Federal Register 63 (197), United States Department of the Interior, Washington, D.C. October 13, 1998.
- USFWS. *Recovery Plan for Upland Species of the San Joaquin Valley, California*. 1998.
- Ventura USFWS. *Species Accounts*. 2003. <http://ventura.fws.gov/speciesaccount/>.